



NEW OKHLA INDUSTRIAL DEVELOPMENT AUTHORITY

JOB No: 41/GM-R/S. M.(E&M)-III/2019-20

Request for Proposal

**Selection of Implementation Agency (IA) for implementation of
Integrated Security and Traffic Management System (ISTMS) for
NOIDA City**

RFP Volume I—Instructions to bidders

Dated:02/11/2020

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1. Disclaimer

NOIDA intend to implement Intelligent Traffic Monitoring System (ITMS) and has prepared this Request for Proposal (RFP) for Selection of Implementation Agency for Design, Supply, Implement, Commission, Operate and Manage the ITMS in NOIDA city. This RFP is a detailed document which specifies terms and conditions based on which the Bidder is expected to work. NOIDA has taken due care in preparation of information contained herein and believes it to be accurate. However, neither NOIDA or any of its authorities or agencies nor any of their respective officers, employees, agents, or advisors give any warranty or make any representations, express or implied as to the completeness or accuracy of the information contained in this document or any information which may be provided in connection or arising out of it. The information provided in this document is to assist the Bidder(s) preparing their proposals. However, this information is not intended to be exhaustive, and interested parties are expected to make their own inquiries to supplement and verify information in this document. The information is provided on the basis that it is non-binding on NOIDA or any of its authorities or agencies, or any of their respective officers, employees, agents, or advisors. Each Bidder is advised to consider the RFP as per its understanding and capacity. The Bidders are also advised to do appropriate examination, enquiry and scrutiny of all aspects mentioned in the RFP before bidding. The Bidders are encouraged to take professional help of experts on financial, legal, technical, taxation, and any other matters/ sectors appearing in the document or specified work. The Bidders should go through the RFP in detail and bring to notice of NOIDA any kind of error, misprint, inaccuracy or omission.

NOIDA reserves the right not to proceed with the Project, to alter the timeline mentioned in this document, or to change the process or procedure to be applied. It also reserves the right to decline to discuss the Project further with any party submitting a proposal. No reimbursement of cost of any type will be paid to persons, entities submitting a proposal pursuant to this RFP.

2. Content of the RFP

- 2.1. The RFP document comprises of the following Sections as listed below and would additionally include any Addendum issued before the due date of submission of the RFP. Any reference to the RFP document includes all the contents unless specifically mentioned otherwise.

VOLUME	CONTENTS
Volume I	Invitation to Bid and Instruction to Bidders
Volume II A	Scope of Work
Volume II B	Minimum Functional & Technical Requirement Specifications
Volume III	Bid Submission Formats and Contract Conditions

3. Introduction

- 3.1. New Okhla Industrial Development Authority (NOIDA) (hereafter referred as Department) invites bids from the eligible parties (hereafter referred as "Bidder") for appointment as Implementation Agency for NOIDA to provide a comprehensive solution as specified in the Volume 2: Scope of Work and Requirement Specification of this RFP.
- 3.2. Bidders are advised to study the RFP documents as mentioned above carefully before submitting their proposal in response to this Notice. Submission of a proposal in response to this notice shall be deemed to have been done after careful study and examination of all Volumes with full understanding of its terms, conditions and implications. Failure to furnish all information required as mentioned in the

RFP documents or submission of a proposal not substantially responsive to the RFP documents in every respect will be at the Bidder's risk and may result in rejection of the proposal:

4. Schedule of Bid Process

Information	Details
RFP No.	41/GM-R/S. M.(E&M)-III/2019-20
Name of the Department	New Okhla Industrial Development Authority (NOIDA)
Name of the RFP	Selection of Implementation Agency (IA) for implementation of Integrated Security and Traffic Management System (ISTMS) for NOIDA City
Contact details of Purchaser	Name of concerned officer – Salil Yadav Main Administrative Building, Sector VI, NOIDA, District Gautam Buddha Nagar – 201301, Uttar Pradesh, India Phone Number :9205691068 Email Id: salil.yadav@noidaauthorityonline.com
Mode of submission	Online on eTender Portal: http://etender.up.nic.in
Date of start of issue of RFP	02-11-2020
Bid validity period	180 days from last date of receiving of bids
Last date (deadline) for submission of bids including EMD	09-11-2020 upto 5:00 pm
Place, Time and Date of opening of Technical proposals received in response to the RFP notice	10-11-2020 time 11:00 am at Sr. Manager E&M-3, Office sector-39, Noida Opposite Community centre sector-39, Noida
Technical Presentation by the Bidders	To be decided
Place, Time and Date of opening of Financial proposals received in response to the RFP notice	To be informed to the technically qualified bidder

- 4.1. Bidders may view and download the RFP document containing the detailed terms & conditions from the Department website <http://www.NOIDAauthorityonline.com/> or e-Procurement website <http://etender.up.nic.in>.
- 4.2. Bidders must note that bids, received after due date and time shall be rejected. Department would not be responsible for any delay in submission of bids.
- 4.3. The Bidder should examine all instructions, forms, terms and conditions, and scope of work in the RFP Document and furnish all information as stipulated therein

5. Tender Fee details:

Amount	Non-refundable amount of INR 10,000/- (Ten Thousand only)
Mode of payment	Demand draft or on-line submission over e-tender portal
Drawn in favour of	New Okhla Industrial Development Authority
Payable city	NOIDA, Uttar Pradesh

6. EMD details:

Amount	INR 1,00,00,000/- (One Crore only)
Mode of payment	INR 1,00,00,000/- (Rupees One Crore) shall be paid through RTGS via Indus bank payment gateway (Details mentioned in e-tender portal) by the due date of submission.
Drawn in favour of	New Okhla Industrial Development Authority
Payable city	NOIDA, Uttar Pradesh

7. Cost of Bidding Process

- 7.1.** The Bidder shall bear all costs associated with the preparation and submission of its bid, including cost of presentations etc. for the purposes of clarification of the bid, if so desired by the Department.

8. Clarification on RFP Document

- 8.1.** A prospective Bidder requiring any clarification on the RFP Document may submit the queries at the Department's email address .. The queries must be submitted in the following format in editable form (Excel format):

BIDDER'S REQUEST FOR CLARIFICATION			
Name and Address of the Organization submitting request		Name and Position of Person submitting request	Contact Details of the Organization / Authorized Representative
			Tel:
			Fax:
			Email:
S. No	RFP Reference(s) (Section, Page)	Content of RFP requiring clarification	Points of clarification required
1.			
2.			

- 8.2. The Department will respond, to any request for clarification to queries on the RFP Document, received not later than the date prescribed by the Department in this volume, section: Invitation to Bid; Clause 3.

9. Pre- Bid Meeting

Pre- bid meeting already held on 17/02/2020 after First publication of this RFP.

10. Amendment of RFP Document

- 10.1. At any time prior to the deadline for submission of e-Bid, the Department may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective tenderer, modify the e-Bid document by amendments. Such amendments shall be uploaded on the e-Procurement website <http://etender.up.nic.in>, and NOIDA web site <http://www.NOIDAauthorityonline.com/> through corrigendum and shall form an integral part of e-Bid document. The relevant clauses of the e-Bid document shall be treated as amended accordingly.
- 10.2. It shall be the sole responsibility of the prospective tenderers to check the web site <http://etender.up.nic.in>, or NOIDA web site <http://www.NOIDAauthorityonline.com/> from time to time for any amendment in the e-tender document. In case of failure to get the amendments, if any, the Department shall not be responsible for it.
- 10.3. In order to allow prospective e-Tenderers a reasonable time to take the amendment into account in preparing their e-Bids, the Department, at his discretion, may extend the deadline for the submission of e-Bids. Such extensions shall be uploaded on the e-Procurement website <http://etender.up.nic.in>, and NOIDA web site <http://www.NOIDAauthorityonline.com/>.

11. Site Visit

- 11.1. The Bidder may wish to visit and examine the site or sites and obtain for itself, at its own responsibility and risk, all information that may be necessary for preparing the bid and entering into the Contract. The costs of visiting the site or sites shall be at the Bidder's own expense.
- 11.2. The NOIDA upon request from any bidder will arrange for site visit of its personnel or agents to gain access to the relevant site or sites, provided that the Bidder gives the NOIDA adequate notice of a proposed visit of at least 7 (seven) days. Failure of a Bidder to make a site visit will not be a cause for its disqualification.
- 11.3. No site visits shall be arranged or scheduled after the deadline for the submission of the Bids.

12. Language of Bids

- 12.1. The Bids prepared by the Bidder and all correspondence and documents relating to the bids exchanged by the Bidder and the Department, shall be written in English language, provided that any printed literature furnished by the Bidder may be written in another language so long the same is accompanied by a duly certified English translation in which case, for purposes of interpretation of the bid, the English translation shall govern.

13. Procedure for Submission of Bids

The Bid Submission module of e-Procurement website <http://etender.up.nic.in> enables the Bidders to submit the e-Bid online in response to this e-tender published by the Authority. Bid Submission can be done only from the Bid Submission start date and time till the Bid Submission end date and time given in the e-tender. Bidders should start the Bid Submission process well in advance so that they can submit their e-Bid in time. The Bidders should submit their e-Bid considering the server time displayed in the e-Procurement website. This server time is the time by which the e-Bid submission activity will be allowed till the permissible time on the last/end date of submission indicated in the e-tender schedule. Once the e-Bid submission date and time is over, the Bidders cannot submit their e-Bid. For delay in submission of e-Bid due to any reasons, the Bidders shall only be held responsible.

The Bidders have to follow the following instructions for submission of their e-Bid:

- 13.1.** For participating in e-Bid through the e-tendering system, it is necessary for the Bidders to be the registered users of the e-Procurement website [http:// etender.up.nic.in](http://etender.up.nic.in). The Bidders must obtain a User Login Id and Password by registering themselves with U.P. Electronics Corporation Limited, Lucknow if they have not done so previously for registration.
- 13.2.** In addition to the normal registration, the Bidder has to register with his/her Digital Signature Certificate (DSC) in the e-tendering system and subsequently he/she will be allowed to carry out his/her e-Bid submission activities. Registering the Digital Signature Certificate (DSC) is a one-time activity. Before proceeding to register his/her DSC, the Bidder should first log on to the e-tendering system using the User Login option on the home page with the Login Id and Password with which he/she has registered. For successful registration of DSC on e-Procurement website <http://etender.up.nic.in> the Bidder must ensure that he/she should possess Class-2/ Class-3 DSC issued by any certifying authorities approved by Controller of Certifying Authorities, Government of India, as the e-Procurement website <http:// etender.up.nic.in> is presently accepting DSCs issued by these authorities only. The Bidder can obtain User Login Id and perform DSC registration exercise above even before e-Bid submission date starts. The Authority shall not be held responsible if the Bidder tries to submit his/her e-Bid at the last moment before end date of submission but could not submit due to DSC registration problem.
- 13.3.** The Bidder can search for active tenders through "Search Active tenders" link, select a tender in which he/she is interested in and then move it to 'My Tenders' folder using the options available in the e-Bid Submission menu. After selecting and viewing the tender, for which the Bidder intends to e-Bid, from "My Tenders" folder, the Bidder can place his/her e-Bid by clicking "Pay Offline" option available at the end of the view tender details form. Before this, the Bidder should download the e-tender document and Price Schedule/Bill of Quantity (BOQ) and study them carefully. The Bidder should keep all the documents ready as per the requirements of e-tender document in the PDF format along with the Price Schedule/Bill of Quantity (BOQ).
- 13.4.** After clicking the 'Pay Offline' option, the Bidder will be redirected to the Terms and Conditions page. The Bidder should read the Terms & Conditions before proceeding to fill in the cost of bid document/e-tender processing fee and EMD payment details. After entering and saving the cost of bid document/e-Tender processing fee and EMD details, the Bidder should click "Encrypt & Upload" option given in the offline payment details form so that "Bid Document Preparation and Submission" window appears to upload the documents as per Technical (Fee details, Qualification details, e-Bid Form and Technical Specification details) and financial (e-Bid Form and Price Schedule/BOQ) schedules/packets given in the tender details. The details available in the scanned copy of tender form cost and of EMD shall be verified by the Authority.
- 13.5.** Next the Bidder should upload the Technical e-Bid documents for Fee details (Cost of bid document/e-Tender processing fee and EMD), Qualification details. Before uploading, the Bidder has to select the relevant Digital Signature Certificate. He may be prompted to enter the Digital Signature Certificate password, if necessary. For uploading, the Bidder should click "Browse" button against each document label in Technical and Financial schedules/packets and then upload the relevant PDF files already prepared and stored in the Bidder's computer. The required documents for each document label of Technical (Fee details, Qualification details, e-Bid Form and Technical Specification details) and financial (e-Bid Form and Price Schedule/BOQ) schedules/packets can be clubbed together to make single different files for each label.
- 13.6.** The Bidder should click "Encrypt" next for successfully encrypting and uploading of required documents. During the above process, the e-Bid documents are digitally signed using the DSC of the Bidder and then the documents are encrypted/locked electronically with the DSC's of the bid openers to ensure that the e-Bid documents are protected, stored and opened by concerned bid openers only.

- 13.7. After successful submission of e-Bid document, a page giving the summary of e-Bid submission will be displayed confirming end of e-Bid submission process. The Bidder can take a printout of the bid summary using the "Print" option available in the window as an acknowledgement for future reference.
- 13.8. Authority reserves the right to cancel any or all e-Bids without assigning any reason.

14. Withdrawal and Resubmission of e-Bid

- 14.1. At any point of time, a tenderer can withdraw his/her e-Bid submitted online before the bid submission end date and time. For withdrawing, the tenderer should first log in using his/ her Login Id and Password and subsequently by his/her Digital Signature Certificate on the e-Procurement website <http://etender.up.nic.in>. The tenderer should then select "My Bids" option in the Bid Submission menu. The page listing all the bids submitted by the tenderer will be displayed. Click "View" to see the details of the e-Bid to be withdrawn. After selecting the "Bid Withdrawal" option, the tenderer has to click "Yes" to the message "Do you want to withdraw this bid?" displayed in the Bid Information window for the selected bid. The tenderer also has to enter the bid Withdrawing reasons and upload the letter giving the reasons for withdrawing before clicking the "Submit" button. The tenderer has to confirm again by pressing "Ok" button before finally withdrawing his/her selected e-Bid.
- 14.2. No e-Bid may be withdrawn in the interval between the deadline for submission of e-Bids and the expiration of period of e-Bid validity. Withdrawal of an e-Bid during this interval may result in the tenderer's forfeiture of his/her e-Bid security.
- 14.3. The tenderer can re-submit his/her e-Bid as and when required till the e-Bid submission end date and time. The e-Bid submitted earlier will be replaced by the new one. The payment made by the tenderer earlier will be used for revised e-Bid and the new e-Bid submission summary generated after the successful submission of the revised e-Bid will be considered for evaluation purposes. For resubmission, the tenderer should first log in using his/her Login Id and Password and subsequently by his/her Digital Signature Certificate on the e-Procurement website <http://etender.up.nic.in>. The tenderer should then select "My Bids" option in the Bid Submission menu. The page listing all the bids submitted by the tenderer will be displayed. Click "View" to see the details of the e-Bid to be resubmitted. After selecting the "Bid Resubmission" option, click "Encrypt & Upload" to upload the revised e-Bid documents.
- 14.4. The tenderers can submit their revised e-Bids as many times as possible by uploading their e-Bid documents within the scheduled date & time for submission of e-Bids.
- 14.5. No e-Bid can be resubmitted subsequently after the deadline for submission of e-Bids.

15. Format and Signing of Bid

- 15.1. The tenderer shall prepare one electronic copy each of the Technical e-Bid and Financial e-Bid separately.
- 15.2. The e-Bid document shall be digitally signed, at the time of uploading, by the tenderer or a person or persons duly authorized to bind the tenderer to the Contract. The later authorization shall be indicated by a scanned copy of written power-of-attorney accompanying the e-Bid. All the pages/ documents of the e-Bid that are to be uploaded shall be digitally signed by the person authorized to sign the e-Bid.

16. Documents Comprising the Bids

The bid prepared by the Bidder shall comprise of the following components:

16.1. Technical Bid - The Technical Bid shall comprise of the following:

- 16.1.1.** Clause 1.1 of Volume III – Bid cover letter
- 16.1.2.** Clause 1.2 of Volume III – Documents of Eligibility Criteria
- 16.1.3.** Clause 1.3 of volume III – Particulars of Bidder
- 16.1.4.** Clause 1.4 of Volume III - Earnest Money Deposit by RTGS only
- 16.1.5.** Clause 1.5 of Volume III – Format for Declaration by the bidder for not being blacklisted/debarred
- 16.1.6.** Clause 1.6 of Volume III – Cloud Service Authorization Form (optional if bidder is providing cloud services for this RFP)
- 16.1.7.** Clause 1.7 of Volume III – Power of Attorney
- 16.1.8.** Clause 1.8 of Volume III – Technical Bid Letter
- 16.1.9.** Clause 1.9 to Clause 1.17 of Volume III – Technical Formats
- 16.1.10.** Clause 1.19 of Volume III – Breakdown of cost components mentioning ONLY bill of material. It should NOT mention cost of any item. Disclosure of any cost in Technical Bid shall lead to rejection of the bid.

16.2. Financial Bid - The Financial Bid shall comprise of the following:

- 16.2.1.** Clause 1.18 of Volume III - Financial Bid Letter
- 16.2.2.** Clause 1.19 of Volume III - Breakdown of cost components& cost summary

17. Bid Prices

- 17.1.** The Bidder shall indicate in the proforma prescribed at Clause 1.18 and 1.19 of Volume III of this RFP, the unit rates of the services, it proposes to provide under the Contract. Prices should be shown separately for each item as detailed in Bid Documents.
- 17.2.** In absence of information as requested in Clause 12.1 above, a bid shall be considered incomplete and summarily rejected.
- 17.3.** The Bidder shall prepare the bid based on details provided in the RFP documents. The Bidder shall carry out all the tasks in accordance with the requirement of the RFP documents and it shall be the responsibility of the Bidder to fully meet all the requirements of the RFP documents.
- 17.4.** The Bidder as part of its Financial Bid should account for all out of pocket, taxes, levies and other expenses that the Bidder shall incur during the contract period.

18. Firm Prices

- 18.1.** Prices quoted must be firm and final and shall remain constant throughout the period of the contract and shall not be subject to any upward modifications, on any account whatsoever. The Bidder shall, therefore, indicate the prices in Clause 12.1 and 12.2 of Volume 3 of this RFP. The Bid Prices shall be indicated in Indian Rupees (INR) only.
- 18.2.** The Financial Bid should clearly indicate the price to be charged without any qualifications whatsoever and should include all taxes, duties, fees, levies, works contract tax and other charges as may be applicable in relation to the activities proposed to be carried out. It is mandatory that such charges

wherever applicable/payable should be indicated separately in Clause 12.1 and 12.2 of Volume 3 of this RFP.

- 18.3.** A financial bid submitted with an adjustable price quotation or conditional bid shall be treated as non-responsive and the bid shall be rejected summarily.

19. Discount

- 19.1.** The Bidder is advised not to indicate any separate discount. Discount, if any, should be merged with the quoted prices. Discount of any type, indicated separately, will not be taken into account for evaluation purpose.

20. Bidder Qualification

- 20.1.** The bidder should furnish a Power of Attorney as per Clause 1.7 of Volume 3 of this RFP.

21. Earnest Money Deposit (EMD)

- 21.1.** The Bidder shall furnish, as part of its bid, EMD of the amount and format as mentioned in Clause 4 of this volume of RFP.
- 21.2.** The EMD is required to protect the Department against the risk of Bidder's conduct which would warrant the EMD's forfeiture, pursuant to Clause 17.6.
- 21.3.** The EMD (denominated in Indian Rupees) shall be in the form of RTGS only.
- 21.4.** Unsuccessful Bidder's EMD will be discharged/ returned after award of contract to the successful Bidder. No interest will be paid by the Department on the EMD amount.
- 21.5.** The successful Bidder's EMD shall be discharged upon the Bidder executing the Contract, pursuant to Clause 23.9 and after furnishing the performance security, pursuant to Clause 23.10.
- 21.6.** The EMD may be forfeited:
- 21.7.** If a Bidder withdraws its bid during the period of bid validity specified by the Bidder in the Bid; or
- 21.8.** In the case of a successful bid, if the Bidder fails;
- i. to sign the Contract in accordance with Clause 23.9; or
 - ii. to furnish performance security in accordance with Clause 23.10.

22. Period of Validity of Bids

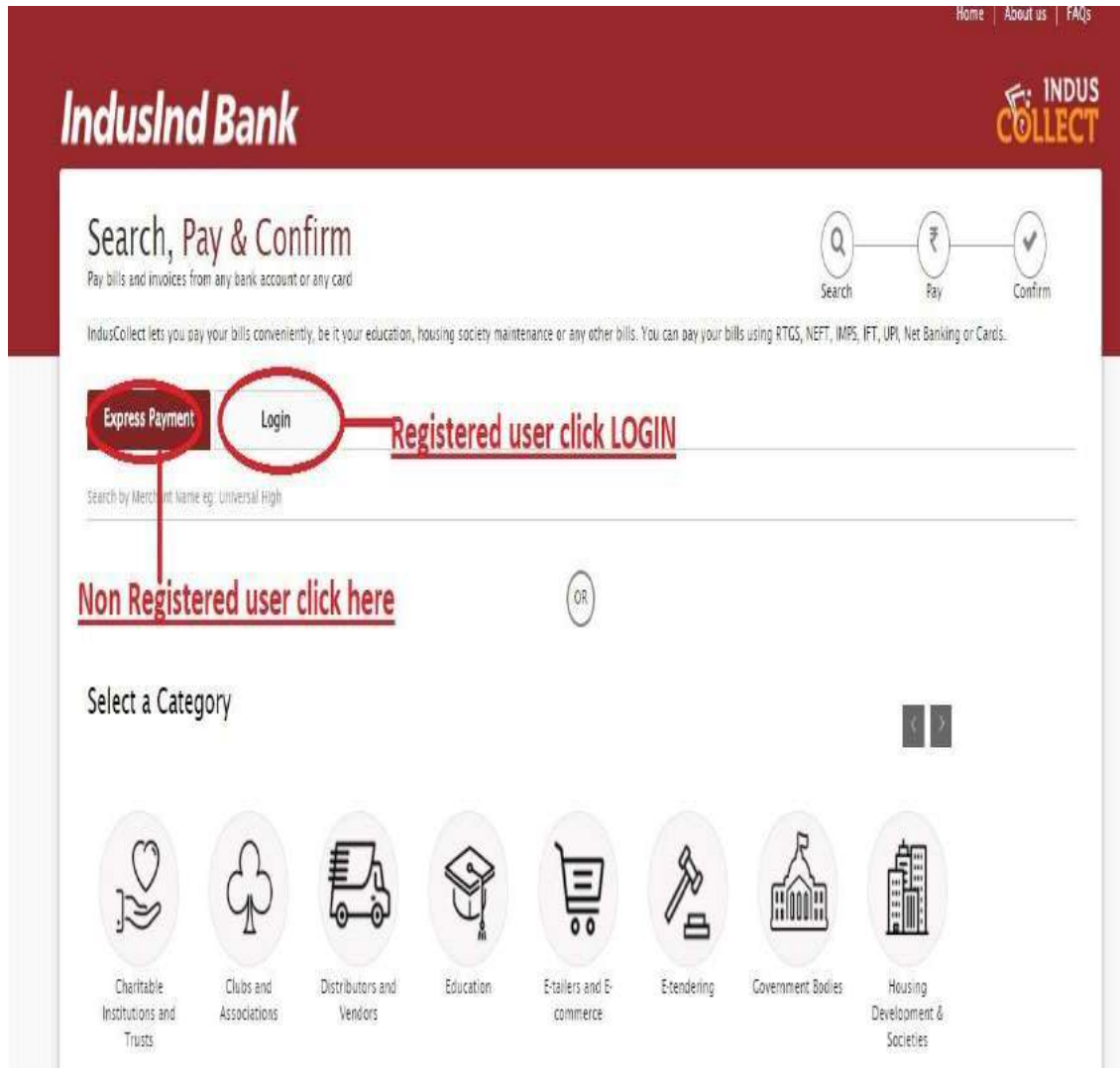
- 22.1.** Bids shall remain valid for a period of as mentioned in clause 3 of this volume of RFP. A bid valid for a shorter period shall be rejected by the Department as non-responsive and shall not be taken up for evaluation purposes.
- 22.2.** The Department may request the Bidder(s) for an extension of the period of validity. The request and the responses thereto shall be made in writing (or by fax or by e-mail). The validity of EMD provided under Clause 4 of this volume of RFP shall also be accordingly extended.

23. Details for Payment

Please refer user manual for paying "Processing Fee" & "EMD Online" .

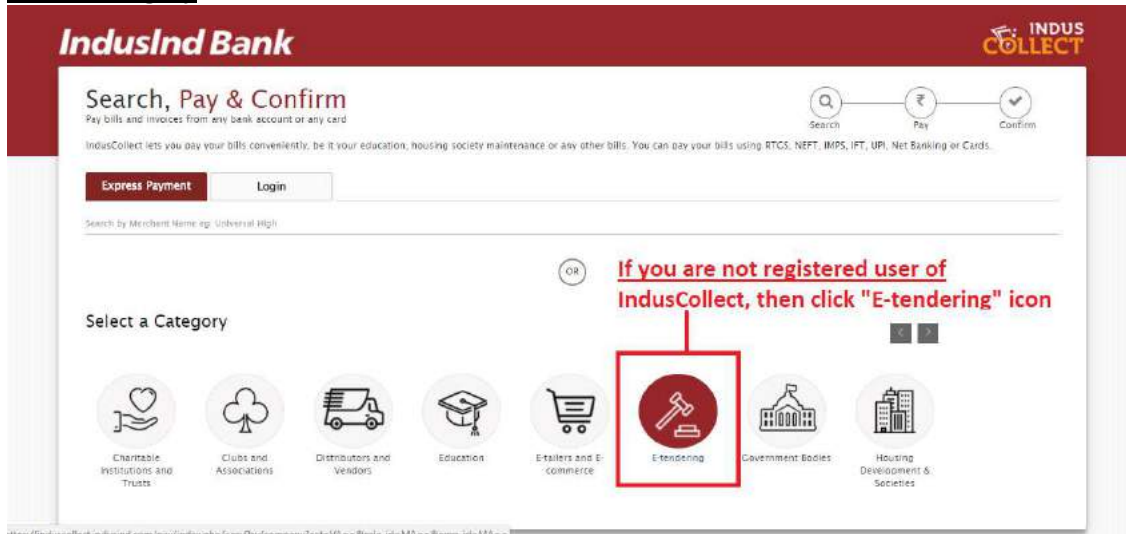
Instructions for bidder to do payment:

1. Visit Indus Collect website: <https://induscollect.indusind.com/pay/index.php>
2. If you are a registered user of Indus Collect, then login click on LOGIN tab. If you are not registered user of Indus Collect then click on Express Payment tab.

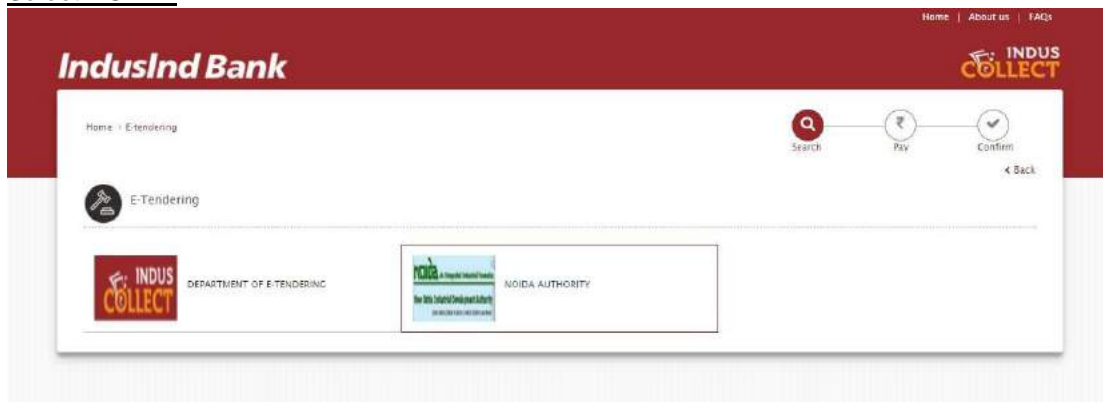


3. Flow for Non- Registered users of IndusCollect:

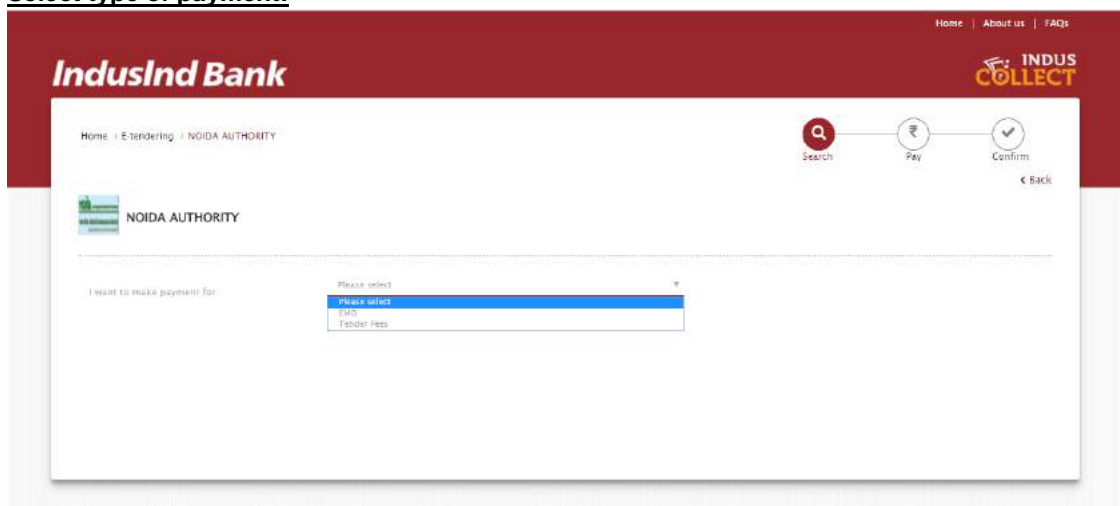
a. **Select Category**



b. **Select NOIDA:**



c. **Select type of payment:**



d. **Enter Data & Click Submit:**

The screenshot shows the 'Noida Authority' payment form on the IndusInd Bank website. The form is titled 'Noida Authority' and includes the following fields:

- Enter to make payment for:
- Financial year:
- Disbursement:
- Job ID:
- Transfer type:
- Name:
- Bill Submission Last Date:
- Mobile No:
- Email:
- Amount:
- Verify Code:

At the bottom of the form, there is a 'Submit' button and a 'Cancel' button. A 'Generate New Code' link is also visible next to the Verify Code field.

e. **Select the payment mode:**

The screenshot shows the 'IndusInd Bank' payment options page. The page is titled 'IndusInd Bank' and includes the 'INDUS COLLECT' logo. The page displays the following information:

- Reference No.: 111118178005401 (Scan for QR Reference)
- Financial year: FY 17-18
- Disbursement: WCI
- Job ID: Please add value
- Mobile No: 7045570455
- Email: pandey@gmail.com
- Bill Amount: 100.00

On the right side, there is a 'Payment Options' section with the following options:

- Internet Banking
- Credit Card
- Debit Card
- NEFT/RTGS/IMPS/Transfer Within Bank

- f. **If user clicks “Internet Banking” or “Credit Card” or “Debit Card”, then user will be redirected to Payment Gateway page. User has to enter authority details.**

g. **If user selects NEFT or RTGS or IMPS or Transfer within Bank, then**

The screenshot shows the IndusCollect payment interface. On the left, a sidebar displays user information: Reference No. 111118178005401, Financial year FY 17-18, Department WC I, Job ID, Mobile No. 7045570455, Email pandey@gmail.com, and Base Amount 100.00. The main content area has a header 'Internet Banking' and three payment method options: Credit Card, Debit Card, and NEFT/RTGS/IMPS/Transfer Within Bank. The 'NEFT/RTGS/IMPS/Transfer Within Bank' option is selected, showing sub-options: NEFT, IMPS, and Transfer within bank. Below these, a note states: 'Post generation of payment slip please initiate the remittance through your bank.' A red box highlights the 'Challan Details' section, which includes fields for Beneficiary Account No. (INDUS0004567890), Beneficiary Name (INDUS AUTHORITY), Beneficiary IFSC Code (INDUS000), Beneficiary Bank (Indus Bank), Base Amount (Rs. 100.00), and Total Amount to be paid (Rs. 100.00). A red arrow points to the 'Generate Payment Slip' button at the bottom. Another red arrow points to the 'Click on Generate Payment Slip' text on the right.

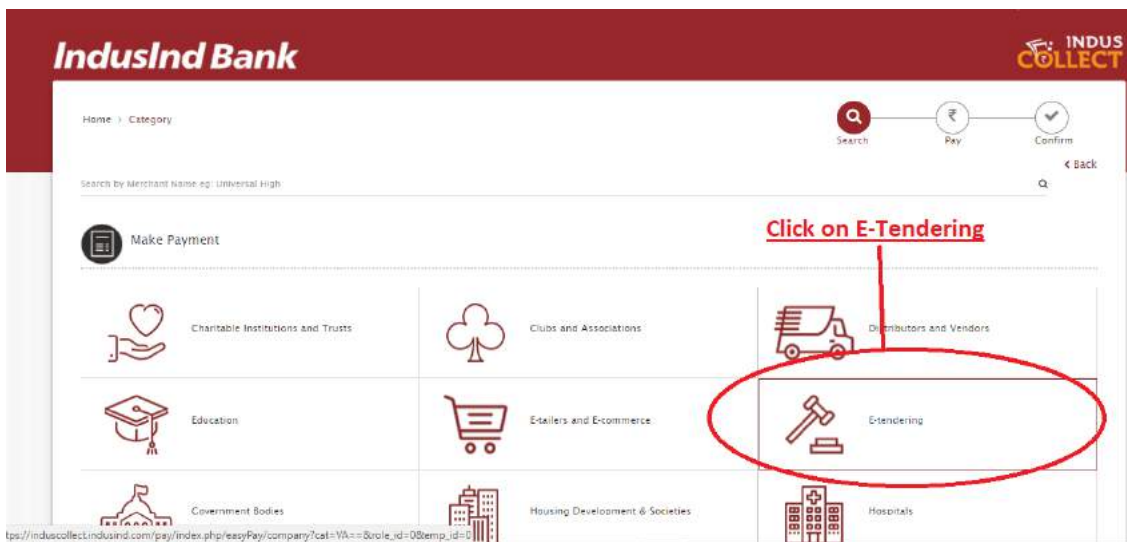
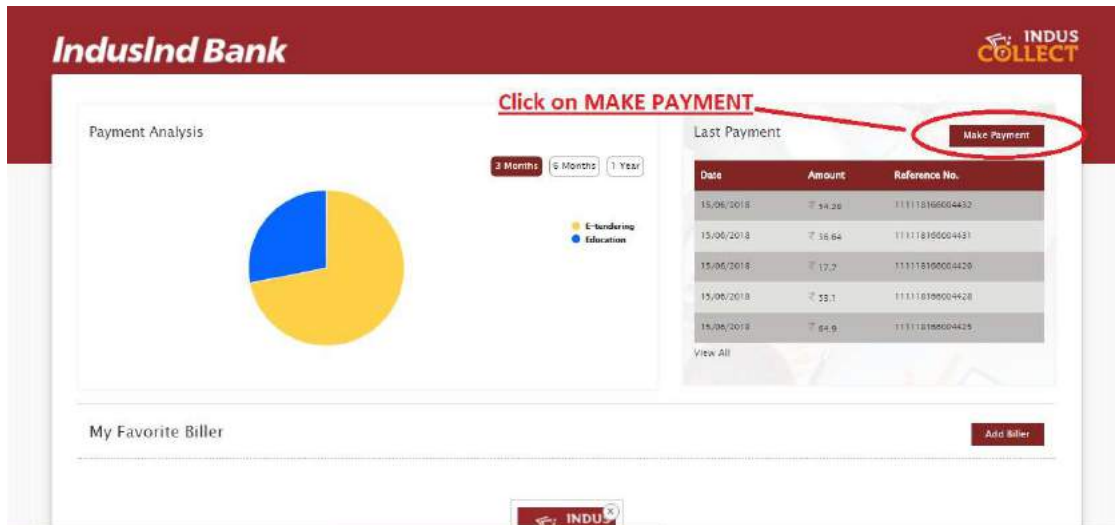
- i. User to click on Generate Payment Slip to generate challan. It will have beneficiary account number and IFSC code.
- ii. User will then login to their own bank's Net banking or mobile app.
- iii. User will add beneficiary basis the details on Challan.
- iv. User will then make the payment to beneficiary

4. **Flow for Registered users of IndusCollect:**

a. **Login to IndusCollect**

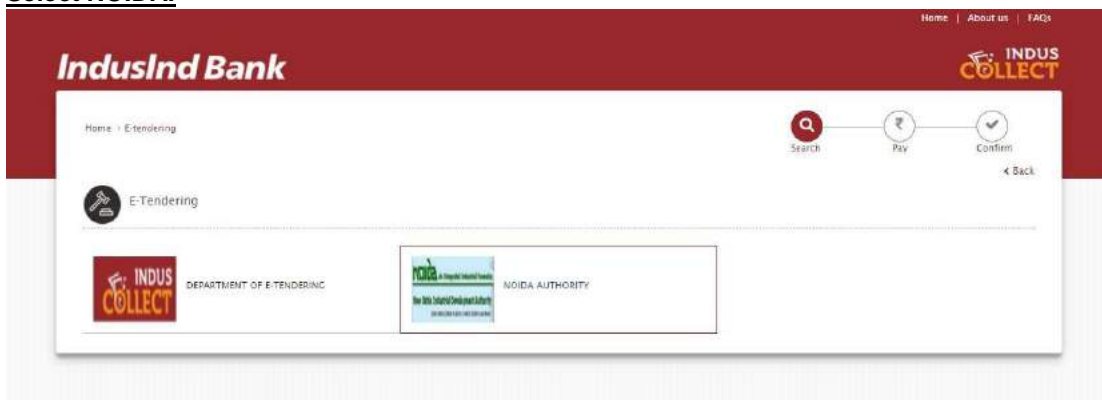
The screenshot shows the IndusCollect login page. The header includes the 'IndusCollect' logo and the text 'Search, Pay & Confirm'. Below the header, there are two main sections: 'CUSTOMER' and 'MERCHANT'. The 'CUSTOMER' section has fields for 'Email/Mobile No.', 'Password', and 'Verify Code', with a 'Login' button. The 'MERCHANT' section has fields for 'User ID', 'Password', and 'Verify Code', with a 'Login' button. A 'Reset' button is also present in both sections. The page also includes a 'Search' button and a 'Pay' button in the top right corner.

b. Click on MAKE PAYMENT



c. Select Category

d. Select NOIDA:



e. **Select type of payment:**

The screenshot shows the IndusInd Bank website interface. At the top, there is a red header with the bank's logo and 'INDUS COLLECT' branding. Below the header, a navigation bar includes links for 'Home', 'About us', and 'FAQs'. The main content area is titled 'Noida Authority' and shows a progress bar with three steps: 'Search', 'Pay', and 'Confirm'. The 'Pay' step is currently active. Below the progress bar, there is a dropdown menu labeled 'Please select' with options 'EMD', 'Tender Fees', and 'Tender Fees'. The 'EMD' option is selected.

f. **Enter Data & Click Submit:**

The screenshot shows the IndusInd Bank website interface, specifically the 'Enter Data & Click Submit' step. The progress bar at the top shows three steps: 'Search', 'Pay', and 'Confirm'. The 'Pay' step is currently active. Below the progress bar, there is a form with various fields for entering payment details. The fields are as follows:

Field	Value
I want to make payment for	EMD
Financial year	FY 2018
Disbursement	NCL
Job ID	Project bid value
Tender type	By Transfer
Name	Mr. Pandey
Bill Submission Last Date	30/06/2018
Mobile No	91-9570-955
Email	pandey@gmail.com
Amount	100
Verify Code	hfeva

At the bottom of the form, there is a 'Submit' button and a 'Cancel' button. A 'hfeva' logo is also visible next to the 'Verify Code' field.

g. Select the payment mode:

The screenshot displays the IndusInd Bank payment gateway. The header includes the bank's logo and 'INDUS COLLECT'. The main content area is titled 'Payment Options' and lists four payment methods: Internet Banking, Credit Card, Debit Card, and NEFT/RTGS/IMPS/Transfer Within Bank. Each method is accompanied by an icon and a circular button with the number '0'. To the left, a sidebar contains reference information for 'Noida Authority', including a reference number, financial year (FY 17-18), department (WC I), job ID, and a base amount of 100.00.

h. If user clicks “Internet Banking” or “Credit Card” or “Debit Card”, then user will be redirected to Payment Gateway page. User has to enter authority details.

i. If user selects NEFT or RTGS or IMPS or Transfer within Bank, then

This screenshot shows the 'Challan Details' section of the payment gateway, which is highlighted with a red box. It includes fields for 'Beneficiary Account No.', 'Beneficiary Name', 'Beneficiary IFSC Code', and 'Beneficiary Bank'. Below these fields, there are buttons for 'NEFT', 'IMPS', and 'Transfer within bank'. At the bottom, a red circle highlights the 'Generate Payment Slip' button. Red text annotations with arrows point to the 'Challan Details' section and the 'Generate Payment Slip' button.

- i. User to click on Generate Payment Slip to generate challan. It will have beneficiary account number and IFSC code.
- ii. User will then login to their own bank's Net banking or mobile app.
- iii. User will add beneficiary basis the details on Challan.
- iv. User will then make the payment to beneficiary

24. Local Conditions

- 24.1.** It will be incumbent upon each Bidder to fully acquaint himself with the local conditions and factors at all respective locations, sites and offices which would have any effect on the performance of the contract and / or the cost.
- 24.2.** The Bidder is expected to obtain for himself on his own responsibility all information that may be necessary for preparing the bid and entering into contract. Obtaining such information shall be at Bidder's own cost.
- 24.3.** Failure to obtain the information necessary for preparing the bid and/or failure to perform activities that may be necessary for project will in no way relieve the successful Bidder from performing any work in accordance with the contract entered into.
- 24.4.** It will be imperative for each Bidder to fully inform themselves of all local and legal conditions and factors which may have any effect on the execution of the contract as described in the RFP documents.

25. Last Date for Receipt of Bids

- 25.1.** e-Bid (Technical and Financial) must be submitted by the tenderers at e-Procurement website <https://eprocure.gov.in/eprocure/app>, not later than the time & date (as the server time displayed in the e-Procurement website) as per Section 1 of this volume of RFP.
- 25.2.** The Department may, at its discretion, extend this deadline for submission of e-Bid by amending the e-Bid document, in which case all rights and obligations of the Department and tenderers previously subject to the deadline will thereafter be subject to the deadline as extended.

26. Late Bids

- 26.1.** The server time indicated in the Bid Management window on the e-Procurement website <http://etender.up.nic.in> will be the time by which the e-Bid submission activity will be allowed till the permissible date and time scheduled in the e-tender. Once the e-Bid submission date and time is over, the tenderer cannot submit his/her e-Bid. Tenderer has to start the Bid Submission well in advance so that the submission process passes off smoothly. The tenderer will only be held responsible if his/her e-Bid is not submitted in time due to any of his/her problems/faults, for whatsoever reason, during e-Bid submission process.

27. Deviations and Exclusions

- 27.1.** Bids shall be submitted strictly in accordance with the requirements and terms & conditions of the RFP. The Bidder shall submit a No Deviation Certificate as per the format mentioned in RFP.
- 27.2.** The bids with deviation(s) are liable for rejection.

28. Arbitration

- 28.1.** Any dispute or difference between the C.E.O. and the bidder as to the rights or liabilities of the parties hereto or as to any matter or thing whatsoever arising under this contract or concerning its construction whether such dispute or difference arises during the continuance of this contract or after its determination by completion or breach or otherwise however, shall in the first instance be referred to the C.E.O. NOIDA, who shall give his decision in writing thereon.
- 28.2.** Such decision shall be final and binding on the parties unless the IA within fourteen days of the receipt thereof give the C.E.O. notice in writing objecting to such decision, in which case and in the any case in which the C.E.O. fails to have a decision in writing within twenty-one days after receipt of notice in writing given to him by the Contractor requiring his decision such dispute or difference shall be referred to an arbitrator appointed by the C.E.O. NOIDA and in either case the decision of the arbitrator (including his decision as to costs) shall be final and binding on the both the parties and the cost of the arbitration shall be borne by the parties in such manner as the arbitrator may decide.
- 28.3.** If any such dispute arises in consequence of an act of God, war or civil commotion and is referred to arbitration under the provisions of this clause, the arbitrator shall decide whether this contract shall continue or shall be determined and shall in either case determine the terms and conditions which it shall continue or shall be determined.
- 28.4.** Provision of arbitration of conciliation Act 1996 or any statutory modification more enactment, there of as rules made there under and for time being enforce shall to be the arbitration proceedings under this clause.

29. Evaluation of Bids

- 29.1.** Tender Evaluation Committee (TEC) will carry out a detailed evaluation of the Technical Bids received by it in order to determine whether they are substantially responsive to the requirements set forth in the RFP document. In order to reach such a determination, Tender Evaluation Committee will examine the information supplied by the Bidders and shall evaluate the same as per the evaluation criteria specified in this RFP.
- 29.2.** TEC while evaluating the Technical Bids shall have no access to the Financial Bids until the technical evaluation is concluded and the competent authority accepts the recommendation. The TEC shall evaluate Technical Bids on the basis of their responsiveness to the Terms of Reference and by applying the evaluation criteria specified in the document. Only responsive bids shall be further taken up for evaluation. Evaluation of the technical bid will be done and at this stage the financial bid will remain unopened. The TEC may require verbal/written clarifications from the bidders to clarify ambiguities and uncertainties arising out of the evaluation of the bid documents. The Technical Bids will be evaluated on the basis of Technical criteria mentioned in the Clause 22.4 of this section of RFP.
- 29.3.** In case, bidder is not meeting technical/ financial criteria in any means, they can use the capability of parent / Subsidiary / group company of ultimate parent for pre-qualification & technical qualification. In such case, the following is to be followed:
- For Technical & financial capability:** will be considered provided the bidder submits a letter of consent signed and stamped by the authorized signatory of concerned entity, stating to use the experience and provide technical support to the concerned bidding organization in case of any requirement. The Indian bidding entity to this project shall submit a self-declaration certificate on a judicial stamp paper, stating using the technical capability of parent/ subsidiary/ group company of ultimate parent.

29.4. Eligibility criteria

- 29.4.1.** The below presented table provides the pre-qualification criteria for the selection of Agency:

Sl. No.	Eligibility Criteria	Documents required
Eligibility criteria for SI		
1	The Bidder should be a company incorporated for a period of at least Ten (10) years prior to the date of bid submission. Consortium / Joint venture not accepted.	Copy of certificate of Incorporation/Registration under Companies Act 1956/ Companies Act 2013 (for Indian companies)/ LLP Act or Registered Abroad under any other Suitable Act.
2	The Bidder should have valid GST registration in India	Copy of GST and PAN
3	The Bidder should have an average annual turnover of INR 100 Crores over the last three (3) Financial Years from the date of RFP publication for IT/ITES/ICT projects It should be noted that: <ul style="list-style-type: none">Foreign currency Turnover will be converted into Indian Rupees based on RBI reference rate applicable as on the date of opening of proposals without assigning any weightage factor.	1. Audited financial statements for last three Financial Years. 2. Statutory auditor's/CA certificate clearly specifying the annual turnover for the specified years.
4	The Bidder shall have positive net worth in last Financial Year .	Certificate from the Statutory Auditor/CA on net worth for last Financial Year
5	The Bidder should have office in the Delhi NCR or should furnish an undertaking that the same would be established within 30 days from the date of contract signing.	Notarized Power of Attorney / Board Resolution to be submitted
6	The Bidder shall have following Certification valid at the time of submission of bid: - ISO 9001:2008 or 2015	Copies of the valid certificate to be provided. The bidder is to ensure that the quality certificates remain valid throughout the period of the contract.
7	The Bidder shall not be blacklisted by any State / Central Government/ Department or Central /State PSUs for providing similar services, as on date of submission of the proposal	Letter of undertaking to this effect on the letter head signed by the Authorized signatory of Bidder.
8	The bidder or OEM should have supplied at least 500 units of cameras for ANPR application	Bidder to provide work order / completion certificate
9	The Bidder should have experience of City Surveillance / CityITMS / Smart City projects / similar government project involving various critical components in last seven (7) years from the date of bid submission, with at least four (4) out of Seven (7) components below mentioned components in a single project: 1. Adaptive Traffic Control System (ATCS) 2. ANPR Cameras / Speed detection / RLVD 3. Variable Message Signboards (VMS) 4. PA System / Emergency Call Box (ECB) / e challan	Work order/ Contract agreement& completion certificate issued in last 7 years as on bid submission and clearly highlighting the scope of work, Bill of Material and value of the contract/order.

Sl. No.	Eligibility Criteria	Documents required
	5. Video Incident Detection System / Analytics /Surveillance 6. Command & Control Centre 7. Data Centre One project of value 80% of estimated cost OR Two projects of value 60% of estimated cost each OR Three projects of value 40% of estimated cost each	
10	The Bidder should have experience of the following confirming to implementation of video surveillance / ITMS projects involving supply & installation of outdoor cameras operational in open outdoor environment in preceding Seven (7) Years from the date of bid submission. Cameras installed inside controlled environment like buildings, Booths, Cabins etc will not be considered. At least 1 project of 800 outdoor cameras or 2 projects of 600 outdoor cameras each or 3 projects of 400 outdoor cameras each	Work order/ Contract agreement& completion certificate issued in last 6 years as on bid submission and clearly highlighting the scope of work, Bill of Material and value of the contract/order.
11	The bidder should have experience (smart city / Safe City / ITMS of minimum Two (2) projects in last Seven (7) years as on date of bid submission.	Copy of Work Order/ Agreement & Completion Certificate issued in last 5 years as on bid submission date.
12	The bidder to submit notarized Power of Attorney/ Board resolution in name of the signing authority of the bid document.	Notarized Power of Attorney / Board Resolution to be submitted
Pre-Qualification Criterion for OEMs		
13	Camera OEM should have supplied at least 2000 IP Outdoor Cameras in India / Globally as on bid submission date cumulatively in maximum 3 (three) order	• OEM to provide work order / completion certificate
14	Camera OEM should have a fully owned and equipped repair and maintenance centre in INDIA for minimum 3 years, as on date of bid submission.	• Details of Address and support phone number for India base Technical support center, repair and maintenance center (self-declaration)
15	Camera OEM should have the following certifications: ISO 9000/1:2008/2015 or ISO 27001	• OEM to provide relevant document
16	The Camera & VMS OEM should be ONVIF compliant conforming 3 rd party integration as on bid submission date	• Copy of the report shall be submitted
17	OEM should not be black listed / banned / debarred by any Central / State government in India and globally as on bid submission date.	• Letter of undertaking by OEM on their letter head signed by the authorized signatory
18	The MAC address of the IP cameras must be registered in the name of quoted OEM of the product.	• Self-declaration by OEM on their letter head signed by the authorized signatory
19	Equipment supplied by the OEM shall have valid manufacturing license from competent authority.	• OEM Self declaration duly signed and stamped on letter head & valid manufacturing

Sl. No.	Eligibility Criteria	Documents required
		license.
20	NEMA 4X / NEMA TS2 / IP-66 and IK10 rated or better	Lab report to be submitted.
21	Camera hardware shall have life of at least 10 years.	OEM Self declaration duly signed and stamped on letter head.
22	ATCS solution OEM should have implemented similar solution as on bid submission date for At least 32 junctions in one city OR At least 24 junctions in Two Cities. OR At least 16 junctions in Three Cities.	Copies of work order with BOQ or Experience letter/CA/ or Company Secretary certified letter, is to be submitted.
23	The OEM of ATCS should have any 02 quality certifications from CMMI Level3, ISO 9001:2015, and ISO 14001. This is to ensure only quality OEM participates in the bid. The certification should be valid as on date of Bid Submission	Certificate copies
24	ATCS solution offered by the bidder shall also be certified/recognized/approved by a premier Institute or Government Authority India/globally. This shall be with supported by documents	Documents copies.
25	ANPR System OEM should have supplied minimum 1000 ANPR licenses (cumulative) globally	Copies of work order with BOQ or Experience letter/CA/ or Company Secretary certified Letter.
26	OEM for Command and Control Centre Application (CCC) should have deployed its application in minimum of 2 projects in India/globally in Smart Cities / Safe Cities / Large Campus / Integrated Security Systems, valid as on date of Bid Submission	Copies of work order with BOQ or Experience letter/CA/ or Company Secretary certified letter
27	The OEM of Command & Control Application should have quality certifications like ISO 9001:2015, ISO 14001 / ISO 27001 to ensure only quality OEM participation, valid as on date of Bid Submission	Certificate copies

29.5. Technical Evaluation Criteria

- 29.5.1.** Only those bidders who qualify the eligibility criteria will be evaluated for the technical evaluation. Bidders who do not qualify for the eligibility criteria, their technical bids and financial bids will not be evaluated
- 29.5.2.** Bidder, whose bids are responsive and score a minimum of 70 of total marks (minimum marks to obtain for technically qualifying) from the technical evaluation criteria would be considered technically qualified. Bidder also must be able to score the minimum qualifying marks in each section (wherever mentioned as per the Technical Evaluation in clause 22.4.7)
- 29.5.3.** Only those Bidder who cross the threshold level of Technical Evaluation indicated below and adhere to the NOIDA technical requirements shall be considered for next stage i.e. Financial evaluation
- 29.5.4.** In case of no response by the Bidder to any of the requirements with regard to the contents of the Technical Bid, no marks will be assigned for the same
- 29.5.5.** Technical bid of the Bidder shall be evaluated for acceptability of Techno-functional requirements, deviations and technical suitability. Bidders shall respond to the requirements as explained below for

their evaluation with regard to experience and qualification. Also, Bidder shall refer and respond to all technical requirements as mentioned in the RFP document

29.5.6. After the technical presentation and demo, the Tender Evaluation Committee may ask the bidder to revise the proposed solution

29.5.7. For network stability, ease of maintenance and compatibility all network switches should be from the same OEM.

29.5.8. Technical Evaluation shall be based on the following parameters and associated Weightage

Sl. No.	Technical evaluation criteria	Maximum Marks
A	Company Profile	20
1	Average annual turnover of Bidder in last 3 years:	
	>=INR 300 Cr.	10
	≥INR 200 cr. to 300 Cr.	8
	INR 100 cr.to 200 Cr.	7
2	The bidder should have following resources on its rolls (permanent employee) as on bid submission date:	
	>800 resources	10
	> 200 to < 800 resources	8
	≥ 100 to < 200 resources	7
B	Relevant Experience	45
3	The Bidder should have experience of city Surveillance / city ITMS / Smart City projects / similar government project involving various critical components in last Seven (7) years from the date of bid submission, with at least four (4) out of Seven (7) components below mentioned components in a single project: 1. Adaptive Traffic Control System (ATCS) 2. ANPR Cameras / Speed detection /RLVD 3. Variable Message Signboards (VMS) 4. PA System / Emergency Call Box (ECB) / e challan 5. Video Incident Detection System / Analytics /Surveillance 6. Command & Control Centre 7. Data Centre One project of value 80% of estimated cost OR Two projects of value 60% of estimated cost each OR Three projects of value 40% of estimated cost each	
	One (01) project of value 80% of estimated cost	15
	Two (02) projects of value 60% of estimated cost each	12
	Three (03) projects of value 40% of estimated cost each	10
4	The Bidder / OEM should have experience of the following confirming to implementation/ integration of at least two video surveillance / ITMS projects in preceding Seven (7) Years from the date of bid submission.	
	At least 1 project of 800 outdoor cameras	15

Sl. No.	Technical evaluation criteria	Maximum Marks
	2 projects of 600 outdoor cameras each	12
	3 projects of 400 outdoor cameras each	10
5	Bidder / OEM should have experience in implementation of Adaptive Traffic Control System during last Seven (7) years from the date of bid submission.	
	At least 32 junctions in one city	15
	At least 24 junctions in 2 cities	12
	At least 16 junctions in 3 cities	10
C	Approach and Methodology	25
8	<p>Understanding of ToR and approach of Implementation, Work Plan and Technical presentation and live demonstration of proposed solution:</p> <ol style="list-style-type: none"> 1. Need to Demonstrate the TCCC control room setup with visualization of minimum 2x2 Screen 2. Integration with Traffic surveillance (General surveillance Camera, RLVD, ANPR with TCCC as per RFP) 3. Functionality as per RFP of Environmental sensor and ECB 4. Integration of at least 4 components as per RFP 	25
D	Manpower	10
9	Project Manager	5
	Qualification	
	BCA/ B.Sc./ B.Tech./ B.E. and MBA	1
	Any other qualification	0.5
	No. of years of experience	
	Over 10 years	1
	Over 8 Years	0.5
	Experience of managing similar nature projects encompassing ITMS/ Surveillance/ Safe city	
	More than 5 projects	2
	More than 3 projects	1
	Should have experience of working on the proposed solution by bidder for	
	3 projects	1
	Less than 3 projects	0.5
10	Solution Architect (ITMS/ CCC)	3
	Qualification	

Sl. No.	Technical evaluation criteria	Maximum Marks
	BCA/ B.Sc./ B.Tech./ B.E./ MCA	1
	Any other relevant qualification	0.5
	No. of years of experience	
	Over 10 years	1
	Over 8 Years	0.5
	Experience of managing similar nature projects encompassing ITMS/ Surveillance/ Safe city	
	More than 5 projects	1
	More than 3 projects	0.5
11	ITMS Subject Matter Expert	2
	Qualification	
	BCA/ B.Sc./ B.Tech./ B.E./ MCA/ MBA	1
	Any other qualification	0.5
	No. of projects in ITMS	
	> 4 projects	1
	≥ 2 and <4 projects	0.5
	Total Marks	100

The Bidder would be technically evaluated out of 100 marks. Bids receiving more than 75 marks would only qualify for financial evaluation.

29.6. Opening of Financial Bids

- 29.6.1.** After evaluation of technical e-Bid, through the evaluation committee the Department shall notify those tenderer whose technical e-Bids were considered non-responsive to the Conditions of the Contract and not meeting the technical specifications and Qualification Requirements indicating that their financial e-Bids will not be opened. The Department will simultaneously notify the tenderers, whose technical e-Bids were considered acceptable to the Department. The notification may be sent by e-mail provided by bidder.
- 29.6.2.** The financial e-Bids of technically qualified tenderers shall be opened in the presence of tenderers who choose to attend, and date for opening of financial bids will be communicated to the Technically Qualified Tenderers subsequently after completion of technical bids evaluation through e-mail provided by the bidder. The name of tenderers, percentage Price quoted for various items etc. will be announced at the meeting.
- 29.6.3.** The Financial bids shall be evaluated by the Department for completeness and accuracy. Arithmetical errors will be rectified on the following basis:

29.6.3.1. If there is a discrepancy between the unit price and the total price, that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected. The total price after calculation shall then be considered for evaluation and identifying the L1 bidder.

29.6.3.2. If there is a discrepancy between words and figures, the amount in words will prevail.

29.6.4. Lowest Quoting Bidder will be selected as per the lowest Gross Total Value (GTV), designated as L1, quoted in Clause 3.2 of Section 4 for signing of the contract.

29.6.5. In the event the L1 bidder does not accept the contract, EMD of the bidder will be forfeited and Department shall then have a right to evaluate the L2 bidder for award of contract.

29.6.6. No enquiry shall be made by the bidder(s) during evaluation of the tender, after opening of bid, till final decision is conveyed to the successful bidder(s). However, the Committee/its authorized representative and office of NOIDA can make any enquiry/seek clarification from the bidders, which the bidders must furnish within the stipulated time else bid of such defaulting bidders will be rejected.

29.7. Post Qualification and Award Criteria

29.7.1. This determination will take into account the Bidder's financial, technical, implementation and post-implementation strengths and capabilities. It will also include examination of the documentary evidence submitted by the Bidder as part of the bid as well as such other information as the Department deems necessary and appropriate.

29.7.2. An affirmative determination will be a prerequisite for award of the Contract to the Bidder. A negative determination will result in rejection of the Bidder's bid, in which event; the Department will proceed to the next best evaluated bid to make a similar determination of that Bidder's capabilities to perform satisfactorily and award of contract.

29.7.3. The Department is not bound to accept the best evaluated bid or any bid and reserves the right to accept any bid, wholly or in part.

29.8. Department's Right to Vary Scope of Contract at the time of Award

29.8.1. The Department may at any time, by a written order given to the Bidder, make changes to the scope of the Contract as specified in Change Control Note in Volume 3 of this RFP document.

29.8.2. If any such change causes an increase or decrease in the cost of, or the time required for the Bidder's performance of any part of the work under the Contract, whether changed or not changed by the order, an equitable adjustment shall be made in the Contract Value or time schedule, or both, with the consent of the Bidder and the Contract shall accordingly be amended.

29.9. Department's Right to Accept Any Bid and to Reject Any or All Bids

29.9.1. The Department reserves the right to accept any bid, and to annul the tender process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder (s) or any obligation to inform the affected Bidder (s) of the grounds for the Department's action.

29.10. Notification of Award

29.10.1. Prior to the expiration of the period of bid validity, pursuant to Clause 18, the Department will notify the successful Bidder in writing that its bid has been accepted. The Bidder shall provide his acceptance within specific period mentioned by Department.

29.10.2. The notification of award will constitute the formation of the Contract.

29.10.3. Upon the successful Bidder's furnishing of performance security pursuant to Clause 22.10, the Department may notify each unsuccessful Bidder and will discharge their EMD, pursuant to Clause 17 of this section.

29.11. Performance Bank Guarantee

- 29.11.1.** Within 15 days of the receipt of notification of award/ Letter of Intent (LoI) from the Department, the successful Bidder shall furnish the performance bank guarantee of 10% of total contract value in accordance with the Conditions of Contract, in the Performance Bank Guarantee prescribed at Clause 1.20 of Volume3 of this RFP given by any scheduled / Nationalized / Scheduled bank.
- 29.11.2.** Failure of the successful Bidder to comply with the requirement of Clause 22.9 of this section shall constitute sufficient grounds for the annulment of the award and forfeiture of the EMD, in which event the Department may award the Contract to the next best evaluated bid or call for new bids.
- 29.11.3.** Performance Bank Guarantee shall be valid for six months more than the period of the contract.

29.12. Signing of Contract

- 29.12.1.** The successful Bidder shall sign the contract within 15 days of submission of Performance Bank Guarantee.

29.13. Proof of Concept (POC) Scope cum General Guideline:

Proof of concept (PoC) will be eliminated for those bidders who have participated and successfully demonstrated the solution in the previous RFP. However, in case of any change in OEM, or the proposed solution, the bidder will have to demonstrate the new solution.

The PoC by bidders will be conducted within 7 days from the date of opening of Technical bid. However, this would not ensure pre qualification and technical qualification of the bidder. Qualification and its scoring will be evaluated by NOIDA and intimated to the bidders for their qualification.

29.13.1. General Guidelines: POC site

- PoC site will be allotted to the bidder by NOIDA and should be visited and surveyed.
- The camera type, angle, lenses, IR, etc. should be fixed as per RFP requirements and submitted in the bid.
- Any deviation other than allowed in the POC document, will be taken as deviation in the bid and the bid will be rejected.

29.13.2. Camera Setup

- The quantity of the outdoor camera should be determined (minimum 1 of each type).
- All installation of field equipment like cameras, sensors, PA system etc. must be placed on poles, as per actual deployment scenario. Cameras must be tested for all lighting conditions.

29.13.3. Software and Server Setup

- A complete setup of VMS and TCCC Software (exact make and version number which is offered in bid) must be established.
- A set of servers (sized appropriately for PoC setup) which are required to install the server-side components of VMS, CCC, ANPR, Video Analytics etc. must be installed. These details should be provided by OEM partners.

29.13.4. POC Setup Presentation

The PoC by bidders will be conducted within 7 days from the date of opening of Technical bid. However, this would not ensure pre-qualification and technical qualification of the bidder. Qualification and its scoring will be evaluated by NOIDA and intimated to the bidders for their qualification.

The PoC setup must be prepared and presented before the PoC. The presentation must include the following:

- Location Plan for the site, indicating the location, make, model and quantity of the devices on the field – including GIS Map showing field of view of each camera.
- Schematic Network Diagram – how the devices and the demo room equipment are connected.
- List of software that are going to be demonstrated.
- All datasheets/ brochures/ literatures of equipment used for PoC.

Steps to be followed during PoC

- 1) The PoC demonstration should primarily cover the following steps at the minimum along with the evaluation framework.
- 2) Introduction of the Bidder team and OEM partners.
- 3) Bidder understanding of the project, time lines and methodology to achieve timelines
- 4) Prior experience and their benefits to this project
- 5) Actual walk-through of the system covering all components:
 - Camera Equipment (major features)
 - Pole Equipment/Edge Networking (flow of video/sensor traffic)
 - Central Networking and Server information (brief intro)
 - VMS Software
 - Video Analytics
 - Traffic enforcement system
 - TCCC Software
- 6) Command & Control Centre:
Camera feeds to be displayed at the workstation of Operator (Operator 1) and shall be able to view the camera's live and recorded video feed. The feeds shall be made available for recording at the PoC control centre (software, hardware).
- 7) Video Analytics:
The Control Centre shall be able to receive the alert from Video Analytics attached to CCTV surveillance cameras, as required in the bid and as proposed.
- 8) Dashboard:
The operator (Operator 1) shall be able to present the Alert on the geospatially enabled maps in the form of visual & audio. Auto pop-up of alert manager window shall be demonstrated.
- 9) Alerts:
Below information to be demonstrated by the Alert Manager:
 - a. Show the criticality of the alert
 - b. Time the alert was created
 - c. Description of the alert
 - d. Sensor which created the alert
 - e. It will have provision to facilitate the operator to locate the sensor on GIS map
 - f. Provision to acknowledge the alert
 - g. Provision to close the alert
 - h. Provision to see detailed view
- 10) Reports:
Demonstration of generation and receipt of analysed reports from the TCCC of the system by the operator.

POC Setup Presentation:

PoC Scope and Technical Evaluation Parameters: ANPR Camera performance

S. No.	PoC Scope
#	During the PoC, ANPR camera should give clear & accurate photo of vehicle at a speed of 100kmph or more. Minimum 20 snapshots / photos should be taken in a stipulated time interval of the traffic in motion to showcase the capability with minimum accuracy level of 90% or better.
#	During the PoC, all the video Analytic features as mentioned in the RFP should give clear & accurate results with minimum accuracy level of 85% or more. Minimum 20 snapshots / photos / clips should be taken in a stipulated time interval of the traffic in motion to showcase the capability.
#	Bidders must showcase the functionalities of the solution as per Scope of work mentioned in the RFP. To do so each bidder will be given minimum 3 locations to demonstrate their respective solutions. PoC shall be conducted continuously for 5 days and results to be submitted to NOIDA every day as per the final scope. All prospective bidders must start the PoC within 15 days from the date of email from NOIDA to conduct PoC.

PoC Scope and Technical Evaluation Parameters:

The table mentioned below indicates an indicative PoC requirement during the bid evaluation stage. The Department may ask demonstrating some components from the list mentioned below or may also revise the requirement.

Sl. No.	Area of PoC Demonstration Scope	Functionality Test in PoC/Demonstration
A. Compliance of the proposed Camera output to the RFP		
1.	Fixed Box Camera Performance	1) General viewing- clarity of video 2) Tampering (e.g. Camera blind, Disconnection, etc.) Alert to be checked 3) Motion Detection to be checked 4) Storage in SD Card in case of connectivity loss to be checked 5) IR Illumination for 30 mtrs to be checked 6) Clarity of video at various times (15 FPS – Day & 8 FPS - Night) in different video compression formats and different video resolutions as per RFP 7) Dual streaming checks
2.	PTZ Camera Performance	1) Camera Make & Model 2) General viewing- clarity of video 3) Zoom ratio to be checked (as per RFP specs) 4) Tampering (e.g. Camera blind, disconnection, power off, etc.) Alert to be checked 5) Pan-Tilt range and Speed to be checked 6) Storage in SD Card in case of connectivity loss to be checked 7) Clarity of video at various times (15 FPS – Day & 8 FPS - Night) in different video compression formats and different video resolutions as per RFP 8) Dual streaming checks
3.	ANPR Camera Performance	1) Camera Make & Model 2) Viewing & Recording Quality at 25 FPS during day/night time 3) Viewing & Recording Quality at 15 FPS during Day Time 4) Viewing & Recording Quality at 8 FPS during Night Time
4.	All Cameras	1) Demonstrate no. of video streams supported with their bandwidth requirement for various resolutions of each stream

Sl. No.	Area of PoC Demonstration Scope	Functionality Test in PoC/Demonstration
		2) Demonstrate Time synchronization in the proposed all camera models 3) Demonstrate support of IPv6 4) Demonstrate various output behaviours of parameters such as WDR / BLC during day/ night 5) Demonstrate Redundancy functionalities in the local SD storage 6) Demonstrate security functionality in camera as supported. 7) value added feature, if offered in the solution by the bidder
B. Compliance of the software solutions to the RFP		
1	Video Management System	All features as per specifications mentioned in RFP.
2.	Video Analytics	Demonstration of: 1) Unidentified object detection 2) Motion / intrusion detection 3) Vandalism and tamper detection 4) Virtual Fence / Tress Passing / Tripwire 5) Loitering (a person coming in camera FOV multiple times in a crowded scenario) 6) Video Loss Alarm 7) Image / Area masking
3.	Demonstration of TCCC Software	1) Demonstrate the CCC Software solution for multi-monitor displays (3 Displays) 2) All CCTV Camera should be accessible through the GIS map by using GIS Filters. 3) Monitoring the status of various assets deployed on the ground (For demo purpose a camera tampering and device offline needs to be demonstrated). 4) Dash Board monitoring of all live, closed and Work in Progress incidents. 5) Incident Management –Traffic Command & Control Center operator will receive the alarm from any of sensors (CCTV Camera, Environmental sensor, etc 6) Based on alarm from sensors, generated alerts will be shown on the Alert panel residing in Monitor i). By selecting the particular alert, it will zoom to camera location on monitor over a GIS map. ii). By click on camera icon, sub menu will open there will have option for creating incident, abandon incident, Live view camera and playback. 7) Operator will check the authenticity of alarm raised by camera. At this stage the video will be streamed by VMS system. If an incident is created then it will send the video feed to be tagged to the incident id. If no Incident is created then operator will abandon the incident and this will be logged as abandoned. This will be the flow for all events coming from subsystem triggers / alarms 8) If condition found true then; 9) Once created incident for the alarm, SOP will be generated for the incident based on the type of alarm. SOP will show on monitor 3. 10) Demonstration of capabilities around visualization, event co-relation, business rules, and deployment of SOP's and workflows

Sl. No.	Area of PoC Demonstration Scope	Functionality Test in PoC/Demonstration
		(Filtering, Notifications etc. Are needed to be demonstrated.) 11) User management with user groups, roles, privileges and access policies 12) Demonstrate support for Single Sign-on that allows user to log-in once for entire system. 13) Other specifications as per RFP
4.	Demonstration of Automatic Number Plate Recognition (ANPR) and Traffic Enforcement System	1) Dummy database will be created for 3 to 5 cars (as Stolen Vehicle) 2) Those cars will be passing from PoC Location at different time period of the demonstration (will be checked if alarm is generated) 3) Number Plate will be captured and matched with dummy database 4) Database will be checked for other vehicle identified Number plate (based on size of vehicle) 5) Colour and Make of the vehicle will be checked 6) ANPR system will detect 200 vehicles on the basis of which real count, actual detection and accuracy will be measured 7) Workability for various types of number plates 8) Delectability for single/dual line number plates 9) Video footage of incident (t-5 seconds to t+5 seconds, where t is time of incident) at required high resolution, Minimum 4 Images of violating vehicle along with Number plate 10) All types of violations A) Red light Violation B) Stop Line violation C) Over Speed Violation (accuracy of speed measurement against Police laser / Radar D) No Helmet Detection, triple riding detection E) Vehicle classification in 4 major categories
D. Compliance to the integration requirements as specified in the RFP		
1	CCC + VMS + GIS + Analytics +Mobile Devices + Sensors etc.	Integration of offered VMS, GIS/Google Map, Analytics, Mobile Devices, Sensors as single homogenous TCCC Software
2	Integrity, Safety and Security of the Source System, which is used for integration	The PoC setup must ensure that the source system (existing ones) which are going to be integrated, shall not be disrupted or made unstable/tempered. The Bidder will provide an undertaking in writing, to the SI of existing systems. The bidder, while carryout PoC setup, must ensure Integrity, Safety and Security of the Source System, which is used for integration
E. Overall General Setup		
1	Quality and Proficiency of PoC Visual Setup, placement of equipment	
2	Adequacy of System Set-up for the Proof of Concept as per this document	
3	Proficiency of Setting up of the system for POC	
4	Overall compliance of the demonstrated Hardware & Software with proposed system	
5	Proficiency of Bidder during the Demonstration	
6	Proficiency of the Manpower in demonstrating the key parameters	
7	Capability of the bidder to respond to the queries raised during the demonstration	
8	Additional Systems demonstrated (If any)	

PoC Result document (to be submitted by the bidder)

At the end of PoC, result document along with videos as recorded during the PoC needs to be submitted to NOIDA. The document should at least have the following sections:

S. No.	Document Section	Contents
1	Objective	To define the objective of the PoC, which are intended to be demonstrated
2	Solution and Network Architecture	Should cover how the field devices, demo room equipment and application software are connected through network.
3	Major Components and Bill of Material (equipment's used in PoC)	Brief description of major components and make, model, qty of equipment(location wise) along with comparison with the make and model as proposed in the bid.
4	Site Photographs	Photographs of Camera, Sensors, Poles, Junction box, Switches, Desktops/Workstations used, Servers, UPS etc.
5	Site Map / GIS Map	GIS Map with camera/sensor/pole locations, make, model, field of view etc.
6	Technical Parameters / Observations	Technical parameters/Datasheets for camera, sensor, switches, CCC work station etc.
7	Compliance/Response Sheets	Comparison of specs of equipment's and solutions (which were part of POC)as proposed in the bid with respect to RFP/subsequent corrigendum requirements.
8	List of Video Recordings supplied	Camera recordings from all CCTV cameras should be labelled properly and copied in CD/DVD/USB media. The content sheet of the DVD can have the following a. Demo/PoC/Presentation Proceeding Location b. Camera name c. Location d. Resolution e. Start Time f. Duration g. End-Time h. Size of File i. Name of File j. Status/Remarks
9	List of Video Analytics/Alarms	These alarm event logs should be labelled properly and copied in CD/DVD/USB media. The content sheet of the DVD can have the following a. Camera name b. Location c. Time d. Alarm type e. Alarm Result/flag f. Status/Remarks
10	Application Screenshots	Photographs/screen capture of the various workstations/desktops showing VMS/CCC/Video Analytics/ANPR etc.
11	Network Bandwidth Observations	Network bandwidth consumed as observed for the equipment and solution sat various times (e.g. day time, night time, less movement in FoV, more movement in FoV, etc.) for different resolution settings at cameras
12	Demo Control Room Photographs	Photographs of the demo room setup, PoC Demo-in-progress

S. No.	Document Section	Contents
13	Contact Info	Name, Email and Mobile number of PoC Lead, in case any further clarification is required about the PoC

This document must be submitted to NOIDA, complete and consistent in all respect, within TWO (02) days of completing the PoC.

The above-mentioned clauses are suggestive. However, final PoC evaluation criterion will be informed to all the qualifying bidders in advance before PoC date. Bidders are required to demonstrate all the features as per expectations of the NOIDA during the PoC. NOIDA reserves the right to reject bid/s of the bidder/s failing to perform PoC successfully.

29.14. Sub-Contracting

The bidder would not be allowed to sub-contract work, except for the following:

- Cabling and fixtures work, and all civil work during implementation.
- Facility Management Staff at Command & Communications Center.

Sub-contracting shall be allowed only with prior written approval of NOIDA. However, even if the work is sub-contracted, the sole responsibility of the work shall lie with the bidder. The bidder shall be held responsible for any delay/error/non-compliance etc. of its sub-contracted vendor. The details of the sub-contracting agreements (if any) between both the parties would be required to be submitted to NOIDA.

29.15. Choice of Original Equipment Manufacturer (OEM):

The bidder shall apply high standards of diligence in choosing an optimal OEM who complies with the tender conditions, specifications & SLAs. The bidder may evaluate products being proposed are not end of life and also there is guarantee of OEM support for minimum period of 06 years. The same may be formally secured through the Manufacturer's Authorizing form Prescribed in RFP. (बिडर को प्रत्येक उपकरण/सामग्री का अनुमोदन विभाग से लेने के उपरान्त ही सामग्री कार्य में प्रयुक्त करनी होगी एवं प्रयोग की जाने वाली सामग्री/उपकरण भारत के पड़ोसी देशों सम्बन्धी केन्द्र सरकार के आदेश का पालन भी करती हो। उपकरणों के स्पेशिफिकेशन एवं DPIIT के आदेश में विराधाभास होने की दशा में DPIIT का आदेश ही मान्य होगा।)

29.16. PPP-MII Order, dated 04 June 2020 from Department of Industrial Policy and Promotion, GoI

The aforementioned Government Order (including No. P - 45021/2/2017-PP(BE-II) dated 4 June 2020 will be applicable to this RFP. The said order will be given preference in case of any contradiction / confusion related to any clause of this RFP.

Any OEM claiming benefit under PPP-MII order need to furnish an affidavit as per format 1.18 in Volume 3 of this RFP.

29.17. Warranty & Maintenance

Bidder shall also provide complete maintenance support for all the proposed integrated solution as outlined in this RFP for a period of 60 (Sixty) months from the date of go-live i.e. "Go-Live" + 60(Sixty) months. "Go-live" is the date on which the proposed solution is completely operational as per the requirements provided in this RFP and all the acceptance tests are successfully concluded to the satisfaction of NOIDA

During the warranty period, the bidder shall warrant that the goods supplied under the contract are new, unused, of the most recent version/models and incorporate all recent improvements in design and materials unless provided otherwise in the contract. The bidder further warrants that the goods supplied under this contract shall have no defects arising from design, materials or workmanship.

NOIDA or designated representatives of the bidder shall promptly notify successful bidder in writing of any claims arising under this warranty. Upon receipt of such notice, the bidder shall, within the warranty period and with all reasonable speed, repair or replace the defective systems, without costs to NOIDA and within time specified and acceptable to NOIDA.

If the successful bidder, having been notified, fails to remedy the defect(s) within the period specified in the contract, NOIDA may proceed to take such reasonable remedial action as may be necessary, at the successful bidder's risk and expense and without prejudice to any other rights, which NOIDA may have against the bidder under the contract

During the comprehensive warranty period, the successful bidder shall provide all product(s) and documentation updates, patches/fixes, and version upgrades within 15 days of their availability and should carry out installation and make operational the same at no additional cost to NOIDA

The successful bidder hereby warrants NOIDA that:

- i. The implemented integrated solution represents a complete, integrated solution meeting all the requirements as outlined in the RFP and further amendments if any and provides the functionality and performance, as per the terms and conditions specified in the contract.
- ii. The proposed integrated solution shall achieve parameters delineated in the technical specification/requirement.
- iii. The successful bidder shall be responsible for warranty services from licensors of products and services included in the systems till the complete cycle of this contract.
- iv. The successful bidder undertakes to ensure the maintenance of the acceptance criterion/standards in respect of the systems during the warranty period.

29.18. Disqualification

The bid is liable to be disqualified in the following cases, but not limited to,

- a. In-case bidder fails to meet the bidding requirements / terms & conditions as prescribed in this RFP
- b. During validity of the bid, or its extended period, if any, the bidder changes its quoted prices.
- c. The bidder's bid is conditional and has deviations from the terms and conditions of RFP.
- d. Bid is received in incomplete form.
- e. Bid is not accompanied by all the requisite documents.
- f. Information submitted in technical bid is found to be misrepresented, incorrect or false, accidentally, unwittingly or otherwise, at any time during the processing of the contract (no matter at what stage) or during the tenure of the contract including the extension period if any.
- g. Financial bid is enclosed with the same document as technical bid.
- h. Bidder tries to influence the bid evaluation process by unlawful/corrupt/fraudulent means at any point of time during the bid process.
- i. In case any Bidder {Excluding Original Equipment Manufacturers (OEM)} submits multiple bids or if common interests are found in two or more bids, then all such bids shall be out rightly rejected.
- j. Bids without EMD will be disqualified as mentioned in the RFP
- k. In case the bid capacity of the bidder is less than the assessed available bid capacity.

30. Confidentiality

All the material/information shared with the Bidder during the course of this procurement process as well as the subsequent resulting engagement following this process with the successful bidder, shall be treated as confidential and should not be disclosed in any manner to any unauthorized person under any circumstances. The employees of the successful Lead bidder who are proposed to be deployed on the project need to comply to information security as per terms mentioned in this RFP.

**CONTRACTOR SIGNATURE
WITH SEAL**

OFFICER INVITING TENDER



NEW OKHLA INDUSTRIAL DEVELOPMENT AUTHORITY

Request for Proposal

**Selection of Implementation Agency (IA) for implementation of
Integrated Security and Traffic Management System (ISTMS) for
NOIDA City**

JOB No: 41/GM-R/S. M.(E&M)-III/2019-20

RFP Volume II A - Scope of work

Dated:-07/02/2020

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1 Glossary

Terms	Meanings
AMC	Annual Maintenance Contract
ANPR	Automatic Number Plate Recognition
ATCC	Automatic Traffic Classification & Counting
ATCS	Adaptive Traffic Control System
BOM	Bill of Material
CCTV	Closed Circuit Television
DC	Data Center
ECB	Emergency Call Box
GIS	Geographical Information System
GST	Goods and Services Tax
HTMS	Highway Traffic Management System
TCCC	Traffic Command and Control Center
ICT	Information and Communication Technology
IA	Implementation Agency
IP	Internet Protocol
IT	Information Technology
ITMS	Intelligent Traffic Management System
LOA	Letter of Acceptance
MIS	Management Information System
NOIDA	New Okhla Industrial Development Authority
OEM	Original Equipment Manufacture
OFC	Optical Fibre Cable
PTZ	Pan-Tilt-Zoom

2 Introduction

2.1 Project Background

NOIDA, short for the New Okhla Industrial Development Authority, is located in Gautam Buddha Nagar district of Uttar Pradesh state. NOIDA came into administrative existence on 17 April 1976 and celebrates 17 April as "NOIDA Day". The city was created under the UP Industrial Area Development Act. As per provisional reports of Census India, the city is currently abode to around 6.50 Lac residents. The city has grown rapidly, and industrialization has taken place in a bigger way. This has in turn resulted in several traffic related issues in and around the city, like traffic jams, increase in number of road accidents, traffic rule violations and over speeding etc.

Considering the increasing traffic, a need was felt to improve the efficiency and effectiveness of the traffic management by introducing an Integrated Security and Traffic Management System (ITMS). It is envisaged that the system will provide a secure and pleasant road experience to the citizens of NOIDA.

2.2 Project objectives:

- **Increased Traffic Signal Efficiency:** Reduction in traffic delays, optimized cycle times at intersection to regulate and maintain normal flow of traffic to enhance the efficiency of the transport infrastructure
- **Improve Journey Time Reliability:** Improve reliability in journey times between various locations
- **Increase Operational Efficiency:** The system is intended to offer operational efficiency to traffic management agency by way of extending IT based compliance process on ground and enable them to deliver better traffic conditions and safe operating conditions
- **Improve Safety:** The real-time traffic monitoring and intelligent traffic systems can prevent accidents by recognizing and thus responding to the potentially dangerous situation in advance
- **Improve Customer Services:** The traffic services to the public can be improved through the user-friendly presentation of the various traffic information in real time through sharing of all relevant data feeds for public consumption. These functions may lead to informed travel conditions within the technology influence area
- **Event Tracking and Real Time Information:** The real-time information at the Traffic Command and Control Center (TCCC) shall enable the operator to take necessary actions based on the type of information. Sending an emergency vehicle to the spot, arranging alternate route to VIP convoys, diverting the traffic to different routes are some of the actions that can be taken based on the Real Time Information. It shall be possible to track a particular event using the cameras installed at the traffic junction. A vehicle, violating the traffic could be tracked and penalized at the next traffic junction based on the vehicle registration number.

With this RFP, NOIDA intends to set-up an ITMS through a process of competitive bidding for selecting an Implementation Agency (IA) for Supply, Installation, Testing, Commissioning and Five (5) years of operations and maintenance. The selected IA shall have the overall responsibility to design, build, implement, operate, and maintain the TCCC from the date of Go-Live / successful commissioning of the ITMS project.

2.3 Project Outcomes & Benefits

The project once implemented shall benefit all the stakeholders. The envisaged key benefits to the City Administration and Citizen are as under:

City Administration	<ul style="list-style-type: none">• The implementation of ITMS in NOIDA City will ensure efficient traffic management, as well as safety and crowd surveillance.• The central command and control will ensure efficient continued working of the field equipment• Continuous surveillance would help in reduction in number of criminal and unlawful activities, number of traffic rule violations, illegal parking, encroachments etc.• Prompt emergency response in cases of accidents, fires, disasters, epidemics, etc. due to availability of real time data and response mechanisms• To lower the costs by adopting a centralized architecture, enabling the platform to be administered and supported from one location• Instant MIS reports for planning, budgeting, monitoring & evaluation• Instant identification of delay points enabling prompt administrative action• Facilitate cross-department collaboration with the help of online systems in compliance with various standard operating procedures will bring transparency in city administration
Citizens	<ul style="list-style-type: none">• Better city planning and development• Services delivered to citizens, faster, and at a lower operating expense• Local economic development• Citizens will also be able to have access to efficient, safe & reliable Urban Transport System• Improve communication between government administrators and citizens by building an interactive Web portal to disseminate information and submit grievances

3 Scope of Services for the Project

The Implementation Agency's scope of work shall include but is not limited to the following broad areas. Details of each of these broad areas have also been outlined in subsequent sections of this document:

The project will be implemented at 84 junctions of NOIDA City. The list of junctions along with detailed indicative BoQ is mentioned in Annexure A of this volume of RFP.

Implementation Agency (SI) shall implement and deliver the following modules:

3.1 Integrated Traffic Control System comprising following features / systems

- Adaptive Traffic Control System (ATCS)
- Traffic Surveillance Cameras
- Automatic Number Plate Recognition (ANPR) System
- Red Light Violation Detection (RLVD) System
- Speed Violation Detection (SVD) System
- Automatic Traffic Counting and Classification (ATCC)
- Variable Message Display boards (VMD)
- Traffic Violation System
- Public Address System (PAS)
- Emergency Call Box (ECB) System
- e-Challan System
- Environmental Sensor System
- Command & Control Center

3.2 Information System

Real-time traffic information like disperse traffic flow, alleviate traffic congestion and alternate route diversion should display on Variable Message Display located at different locations in city as well as viewed on Traffic Command and Control Center.

3.3 Public/Vehicle Transport Priority System

The identified junctions for this project should be configured in such a manner, that, prioritization of defined priority vehicle/ public Transport for seamless travel in case of emergency can be made possible. This should create Green Channel for fire vehicle, medical assistance and Disaster Management System.

3.4 Fast Emergency Vehicle Preemption System

Signal preemption allows emergency vehicles to disrupt a normal signal cycle to proceed through the intersection more quickly and under safer conditions. A signal preemption system can decrease emergency vehicle response times. The fast emergency vehicle system assists emergency vehicles to reach an accident /incident site as quickly as possible. The fast controls traffic signal controls traffic signals to priorities driving of emergency vehicles.

3.5 Setting up of Command Control Center for ITMS

NOIDA has envisaged to develop state of the Art Traffic Command and Control Center (TCCC) to enable NOIDA Traffic Police for real time monitoring of the various facets of management of traffic in NOIDA City and its related components. Traffic Command and

Control Center (TCCC) will be the heart of this project, where the overall monitoring and control of major functions of the data / communication network resides.

While the information gathered at TCCC can rapidly be shared various across agency lines to accelerate problem response and improve better coordination. Furthermore, the TCCC will help in anticipating the challenges and minimizing the impact of disruptions on city road / Junctions for smooth flow of traffic. The scope of the project includes implementation of identified TCCC and integrate the existing command and control center. It is important to have integration in place between existing control room and future ready TCCC. Scope also includes conduct a detailed assessment of current state of traffic services being provided and accordingly plan, design a comprehensive technical architecture of TCCC so that relevant current and future traffic management solution and its components may be integrated with near future whenever required.

IA has to provide edge devices, network connectivity, (Sensor to Data Center / Cloud) and application software and other required components. Compute and storage components of the solution shall on the cloud and prime responsibility of the IA for successful implementation of the project. The IA will make all the arrangements related to its safety and security.

All the services related to ICT components of ITMS project such as cameras, variable sign boards, Public address system, e challan, ITMS and any future ICT initiatives which will act either as upstream or downstream interfaces to the Integrated Operations Platform. Feed from all these field devices will be monitored and controlled from TCCC. TCCC will be the single platform from where all decision making shall be done.

3.6 Manage and Integrating existing HTMS project of NOIDA:

- NOIDA is operating an HTMS control room. This is to monitor and control the sensors and store the collected data for further analysis and utilization deployed under Highway Traffic Management System between Mahamaya to Pari Chawk on Gautam Buddha Expressway.
- The existing HTMS was installed and commissioned in 2015 by M/s EFKON Limited. The application is currently being managed by EFKON Limited from past 5 years. The O&M contract between the agency and NOIDA is getting expired in 04 January 2020. The entire infrastructure and software application are the property of NOIDA.
- The Command Center also hosts a Call Center. The call center solution is primarily assisting the agents to capture traffic violations and transfer ECB calls to ambulance or on road patrolling vehicles through mobile etc. The control center equipment is powered through online UPS for uninterrupted functioning of the system.
- The traffic violations observed on this stretch is manually entered by the NOIDA Traffic Cell in the e-Challan system and then the challan is generated and sent to the violators.
- The existing HTMS solution will become the integral part of the new ITMS Solutions. The IA would also be responsible for O&M of existing HTMS along with the NOIDA ITMS project. The IA may factor the charges for O&M for 5 years for NOIDA HTMS in its price bid.
- IA is encouraged to have detailed study of the existing HTMS command and control center and visit the sites where field equipment is installed to assess integration feasibility of HTMS with ITMS and its related technical and commercial parameters. The bidders are advised to make the commercial estimations accordingly.

- The IA shall also explore the existing HTMS and come up with a plan confirming best utilization of the existing HTMS and its command and control center.
- NOIDA in coordination with Traffic police will facilitate the meetings with service provider's technical team with details of technical specifications and architectural details for this integration process.
- The details of existing infrastructure of HTMS command control center is given in below table:

A. HTMS Infrastructure details:

Sl. No.	Component	Quantity	UOM
1	Variable Messaging Signboard (VMS)	13	Nos
2	Emergency Call Box (ECB)	24	Nos
3	Video Incident detection cameras	15	Nos
5	ANPR speed monitoring	24	Nos
4	Fixed box cameras	92	Nos
5	PTZ cameras	46	
6	Weather monitoring	1	Nos
7	ATCC	4	Nos
8	E Challan	1	Lot
9	Command Control Center	1	Lot
10	Data Center	1	Lot
11	Fiber Optic Cable Network	60	Kms

B. Agents detail:

The agent details are from existing HTMS project. This is for the reference of the bidders. The bidder needs to assess the total number of manpower required to be deployed at the TCCC as per the RFP requirement. The indicative requirement is of minimum 15 people to support monitoring of data feeds at TCCC.

Sl. No.	Component	Details	Shifts
1	No. of agents	13	General shift (09.00 hrs to 18.00 hrs)
2	Project Manager	1	General shift (09.00 hrs to 18.00 hrs)
3	Supervisor	1	General shift (09.00 hrs to 18.00 hrs)
4	Operator	7	3 shifts
5	Network admin	1	General shift (09.00 hrs to 18.00 hrs)
6	Site maintenance team	3	General shift (09.00 hrs to 18.00 hrs)

C. Traffic Command Control Center (TCCC) detail:

Sl. No.	Component	Details
1	Video wall	70 inches cubes (8*2 cube)
2	Area of command center	~ 2500 sq.ft.
3	Storage	10 TB and expandable up to 100 TB
4	Availability of feeds	36-48 hrs live storage

3.7 Operations and Maintenance (O&M) services

The IA shall undertake the O&M services for a period of 5 years in the project. This will start after completion of Go-Live of each phase.

Warranty period of the product supplied under project i.e. hardware, software, IT/Non-IT etc., will be considered after phase wise Go-Live. In case, the project implementation gets delayed the O&M period will be accordingly adjusted/reduced/increased so that the overall project tenure remains for complete 5 Years.

The IA shall be given responsibility to undertake operations and maintenance of the existing HTMS system already in use. Considering continuity in services to NOIDA of existing HTMS System the successful Bidder shall start operations and maintenance activity immediately after contract signing date. Required commercials for the same shall be duly filled and mentioned in the financial bid format. The IA is suggested to conduct a thorough study of existing HTMS before quoting any price estimate of integration. The price validity of the commercials shall be for minimum 180 days. NOIDA may allot operations and maintenance / AMC work to the successful bidder if deemed approved.

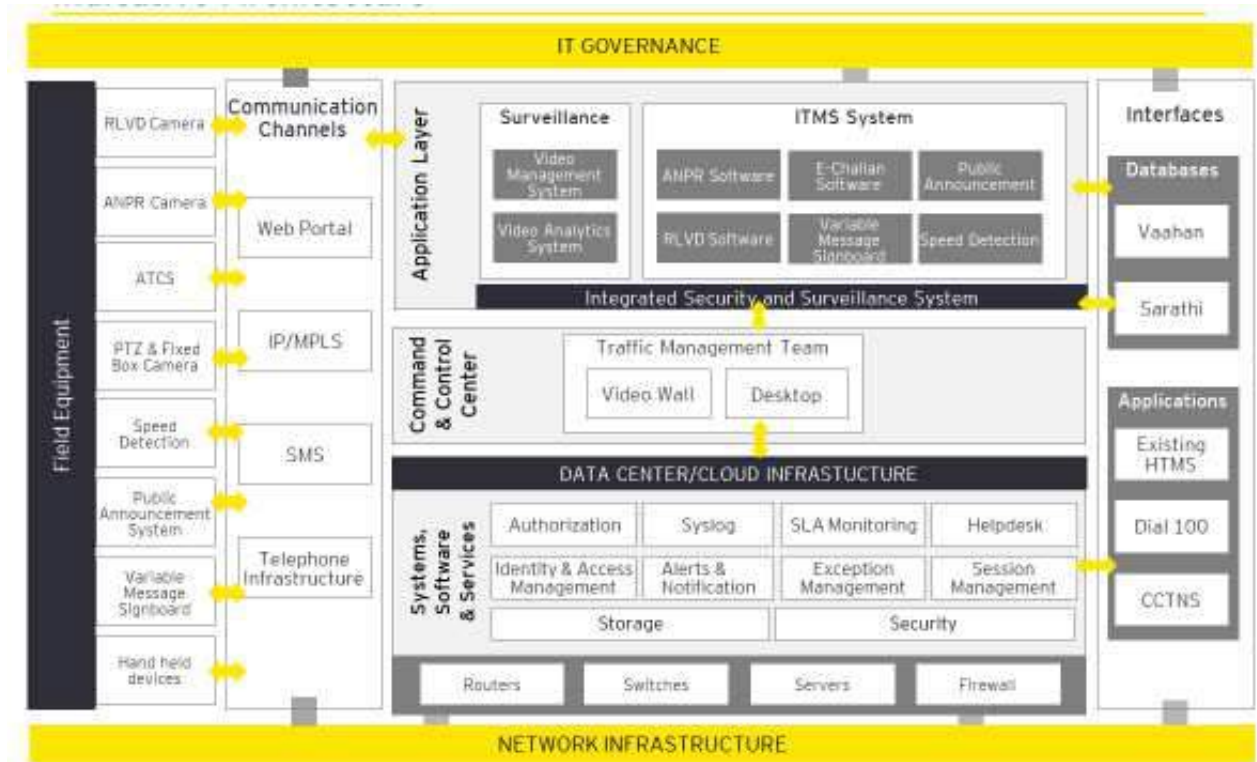
4 Solution overview of proposed ITMS

4.1 Project components

ITMS project is envisaged with multiple applications, which will ensure to improve the mobility, discipline and safety on NOIDA City roads, including:



4.2 Indicative Architecture



4.3 Component description:

4.3.1 Adaptive Traffic Control System (ATCS) – Design, implement, operate and maintain an automated traffic-light control system that switches lights depending on the density of traffic in a road. Sensor and Video based Vehicle detectors for counting and classification will be installed. Signal controller, Traffic light aspects, poles, power supply provisioning and related accessories and associated civil work including cabling for successful operation of the system shall be considered in overall solution.

4.3.2 Automatic Number Plate Recognition Camera (ANPR) - The IA shall provide Automatic Number Plate Reader (ANPR) solution at the identified intersections. The IA shall describe in detail the design, operational and physical requirements of the proposed ANPR system to demonstrate compliance with all the specified requirements of RFP.

The placement of the ANPR camera shall ensure no blind spot is left on the lanes being covered, thus ensuring capture of details of all the vehicles, passing through the demarcated lanes. The placement and orientation of the cameras shall consider covering some distance on either side of the verge of the road as well.

The feed from ANPR cameras will be accessed in the command and control Center. It shall process the image using OCR software, for getting the registration number of the vehicle with highest possible accuracy. The system should be able to detect, normalize and enhance the image of the number plate for detection of alpha numerical characters. System should be able to identify stolen/ suspected vehicles by cross checking the numbers with vehicle database. ANPR software should be integrated with video management system.

4.3.3 Surveillance cameras – The IA shall install surveillance cameras at the identified locations so as to keep an eye on the movements happening at the junctions. The cameras should be placed in such a manner that they should cover the junctions, its connecting roads, non-parking areas, side view of metro stations, market areas to make maximum area of view to be monitored. The IA should consult NOIDA Traffic Police to identify the locations for installation of cameras. A detailed survey shall be conducted by the IA along with the NOIDA and Traffic Police at each of the strategic location. This survey shall finalize the orientation/field of view and the position of cameras. Appropriate field of view snapshot shall be taken by camera for future reference at the time of survey. The surveyors shall also finalize the approximate location of foundation for junction box and camera poles. The route for all the underground cable laying shall be finalized during this survey. Every detail, finalized during the survey, shall be demarcated on an AutoCAD drawing by the IA and submitted to NOIDA in the form of a detailed site survey report along with other details for its approval.

4.3.4 Red Light Violation Detection System (RLVD) - Red Light Violation Detection (RLVD) system is a system for capturing details of vehicles which have crossed the stop line at the junction while the traffic light is red. The system shall be able to automatically detect red light through evidence camera units and other equipment and use ANPR solution to capture the number plate of the vehicles. The information so captured will be used to issue challans to the violators. The process of issuing of challans to violators shall be based on suitable platform/technology installed at the command and control Center. The challans shall be printed in the command and control Center on a preapproved format for challans. The responsibility to dispatch the challans shall be on the IA for the complete period of the contract. IA shall incorporate the cost of printing the challans and dispatching the same to the violator's address, as recorded from the integrated Vahan / Sarathi databases. The IA shall consider the costs for the entire period of operations and maintenance as detailed in the contract. The IA shall describe in detail the design, operational and physical requirements of the proposed Red-Light Violation Detection system to demonstrate compliance with all the specified requirements of RFP.

RLVD solution will have an overview camera to capture the zoomed-out picture of the entire area when there has been a red-light violation. Light sensors will be placed to detect the change in traffic light. Once the traffic light has turned red, the sensors shall activate the camera for capturing images of the vehicles which have jumped the traffic light. The ANPR shall read the number plate of the vehicle and store the same in the database.

RLVD system; in case of an offence detected, shall capture details such as site name, location details, lane number, date and time, registration number of car and type of offence on the image itself. The system should also be able to generate number of reports for analysis such as the traffic light with maximum offenders, peak time of traffic offence and other reports in discussion with Purchaser.

4.3.5 Speed Detection System - IA is required to install the speed detection system at the required locations as specified by NOIDA including all equipment required for proper functioning of the system. The IA shall describe in detail the design, operational and physical requirements of the proposed speed detection system to demonstrate compliance with all the specified requirements of RFP.

The speed detection system should work 24x7 across the identified locations. The system should be designed in such that it can be shifted to a new location if required by NOIDA.

The system shall create a virtual grid to measure the speed of the vehicle by calculating the distance travelled and the frames captured (time). Accordingly, if the vehicle is over speeding, the equipment shall take multiple pictures of the vehicle and record the number plate of the vehicle. The ANPR application shall capture the registration number of the vehicle. The speed

detection system should be able to store all the images in proper format for analysis and issuing of challans in terms of Site name, location details, lane number, date and time details, registration number of car and speed of vehicle. The process of generating challans and dispatching the same to violators shall remain the same as described above. The cost of paper, printing, courier and any other requirements shall be borne by the IA for the entire project operations and maintenance period.

The system should generate reports for further analysis by the Authority. The enforcement back office database and application are required to provide all the facilities for viewing offices, issuing prosecution notices and/ or the issuing of warning letters and the necessary tracking of responses.

4.3.6 Public Address System - Public Announcement system would be used at intersections, public places, market places or those critical locations as identified by NOIDA to make important announcements for the public. It should be centrally controlled where in one message can be broadcasted across all PA systems or specific announcement can be made to a particular location.

The IA shall describe in detail the design, operational and physical requirements of the proposed public announcement system to demonstrate compliance with all the specified requirements of RFP.

3.3.7 Variable Message Signboard - Variable Message Signboard (VMS) would be installed at strategic locations as mentioned in the RFP. The VMS will communicate information and guidance such about traffic, weather, diversions etc. to the citizens / public on the road. They will also be used for showing emergency/ disaster related messages as and when required. The IA shall describe in detail the design, operational and physical requirements of the proposed Variable Message Signboards to demonstrate compliance with all the specified requirements of RFP. Each unit shall be provided with a unique identification number and shall communicate with the command control center system.

The VMS will be managed and operated from the command and control center. The information in the form of data messages will be fed in a manner to be displayed on a specific VMS installed at a particular location or across all locations. The VMS boards should be viewable from a distance of 100m and various angles on the road.

For installing the VMS Signboards, the IA shall provide Gantry with spans, as required at the various locations (single lane road, double lane road). It is the responsibility of IA to conduct a site assessment study and define the Span depending on the number of lanes. The IA shall consider additional space for lateral clearance as well as a vertical clearance height as per NHAI (National Highway Authority of India) guidelines.

4.3.8 Command Control Center - Traffic Command and Control center should have IT and Non-IT infrastructure to collect, process, record and share traffic information to display on VMD etc. to the Citizens for seamless travel across NOIDA city. TCCC should facilitate to monitor and analyze traffic at each junction on video wall / Monitor as well as control Junctions Signal centrally. CCC comprises Enterprise Management System, Video Management System, Data Center, Viewing Display, Help / call center facilities, etc.

3.3.9 IT Infrastructure – This should include hardware and software at Command and Control Center with Data Center for the management of the edge devices signal, Traffic command and Control Center and the traffic management software platform develop individual signal control strategies including definition of signal grouping, setting of potential strategies for traffic control

under various scenarios, specification of traffic management strategies for planned and unplanned events develop a consolidated database of incoming real time data for future analysis and evaluation purposes. It is envisaged that the proposed traffic control system will incorporate historic trends for development of traffic management strategies and centralize control strategies.

4.3.10 e-Challan System – The IA should make a provision of integration of existing e Challan system used in HTMS project in the proposed ITMS application. The e-Challan system shall be configured to automatically generate traffic challans based on infractions received from the installed field equipment including RLVD, ANPR, No Helmet detection, Free Left violation, Triple riding violation, No parking violation and SVD systems.

4.3.11 Helpdesk - IA will be required to establish the Helpdesk support and provide Facilities Management Services to the project. The successful IA shall setup a central helpdesk at Command and Control Center.

The IT Help Desk shall act as a hub for reporting technical support incidents and service requests. The staff manning the TCCC and other stakeholders shall be directed to contact the Help Desk for support. The following is a high-level description of the services to be provided by the IT Help Desk:

- Interact with the TCCC staff and other users in a respectful and courteous manner
- Work with the customer to accurately and thoroughly document the incident description, comments, and resolution
- Resolve the problem or complete the request on first contact
- When necessary, escalate, assign, or refer the ticket to the appropriate team of the IA
- Make every effort to respond to and resolve all assigned tickets, on time
- Communicate revised time estimates for all tickets assigned to the IT Help Desk
- Document updates to any tickets assigned to the IT Help Desk
- Confirm the resolution and completeness for all tickets assigned to the IT Help Desk prior to closing the ticket

5 Activities schedule under the project

5.1 Inception report, Site Assessment and project plan

The IA should start the project by submitting an Inception report. The report should comprise (illustrative):

- Site survey report
- Understanding of the project
- Approach and Methodology to execute the project
- Team members assigned to the project and deployment schedule
- Responsibility matrix for all stake holders.
- Detailed Project Plan along with deliverables and dependencies
- Risk and mitigation plan etc.

Detailed site assessment should be done by the IA as per the activities mentioned above to finalize technical architecture and project plan. This should be done in consultation with Authority and respective stakeholders. The activities under this would include:

- a. Assess the existing infrastructure of traffic junctions, traffic management systems, applications. etc. including traffic signaling systems and junction management. The Department may request IA to:

- change location of junctions listed in this RFP in Annexure 1 of this document due to any reason like, close of junction and metro construction etc. during implementation time.
- shift installed infrastructure during implementation phase to a new location during O&M phase.

The IA should have to cater the request appropriately at no extra cost to the department. The IA's may note that, such request would only be 10-20% of the total junction list.

- b. Conduct the site surveys to finalize the location of traffic signal controller, pelican signal, number of traffic signal aspects, Traffic Junction camera, locations and height of poles, cantilever, junction box, connectivity and cable routing etc. Any variation for any hardware requirement shall be submitted to authority for approval as per survey report.
- c. Finalization of detailed technical architecture, gap analysis and project plan
- d. Develop traffic management plans for individual signal controls and groups of signal controllers along with pre-planned intervention strategies for special scenarios
- e. Obtain site Clearance obligations and other relevant permissions The Implementation Agency (SI) should ensure the successful implementation of the proposed Integrated Traffic Management System (ITMS) and provide O&M for the entire contract period and capacity building support to NOIDA as per the scope of services described below. Any associated item part of RFP BOQ not expressly stated in this document but required to meet the needs of the Authority to ensure successful operations of the system shall essentially be under the scope of the Implementation Agency (IA) and for that no extra charges shall be admissible

The following minimum parameters should be captured during the comprehensive study

- Volumes of vehicles moving on the road network within the area identified for ITMS implementation.
- Vehicle type distribution
- Directional distribution
- Additional dependencies with respect to the available infrastructure and geometry at the junctions.
- Any other relevant data which the SI anticipates will assist in establishing the benchmarks for the project.

The Implementation Agency shall also identify the customizations/ workaround that need to be made to the available field devices and software solution and submit a document on the Gap analysis and replacement / up-graduation requirements.

5.2 Design, Supply, Installation, Testing and Commissioning of Field Equipment:

- Adaptive Traffic Control System (ATCS)
- Traffic Surveillance Cameras
- Automatic Number Plate Recognition (ANPR) System
- Red Light Violation Detection (RLVD) System
- Speed Violation Detection (SVD) System
- Automatic Traffic Counting and Classification (ATCC)
- Variable Message Display boards (VMD)
- Traffic Violation System
- Public Address System (PAS)
- Emergency Call Box (ECB) System

- e-Challan System
- Environmental System

5.3 Installation of cameras

The cameras which will be installed at the junctions will be connected to the UPS installed in the junction boxes for providing alternate power source. The main source of power will be from the existing power infrastructure used by NOIDA for power supply to traffic signals. The IA will size the panels as per the requirement of each junction. The IA should have to consider following check-points while installing/ commissioning cameras:

1. Ensure objective is met while positioning the camera such that the required field of view is being captured as finalized in primary survey. This is applicable for both surveillance and ITMS perspective.
2. Ensure camera is protected from the on-field challenges of weather, physical damage and theft.
3. Make proper adjustments to have the best possible image / video captured.
4. Ensure that the pole is well placed for vibration resistance adhering to the Road safety norms.
5. Collusion preventive barriers around the junction box and pole foundation in case its installed in collision prone place.
6. Appropriate branding or color coding (Police /NOIDA Branding) of poles and junction boxes, to warn mischief mongers against tampering with the equipment at the junction.

5.4 Installation of Poles / Cantilevers / Gantry:

1. The IA shall ensure that all the installations to be as per satisfaction of NOIDA.
2. For installation of variable message signs (VMS), CCTV Cameras, PTZ Cameras, RLVD (Red-light violation detection), speed violation equipment, public announcement system, etc. the IA shall provide appropriate poles and cantilevers and any supporting equipment
3. IA to ensure that the poles erected to house cameras are good, both qualitatively and aesthetically
4. IA should use the industry best practices while positioning and mounting the cameras and ensure that the pole / mast implementation is vibration resistant. Arrangements for bird scare spikes on top of camera shall be made to prevent birds from sitting on top of camera box
5. The poles shall be installed with base plate, pole door, pole distributor block and cover
6. Base frames and screws shall be delivered together with poles and installed by the IA
7. In case the cameras need to be installed besides or above the signal heads, suitable stainless-steel extensions for poles have to be provided and installed by the IA, so that there is clear line of sight
8. The successful IA shall provide the structural calculations and drawings for approval to NOIDA. The design shall match with common design standards as applicable under the jurisdiction of NOIDA city and NHAI guidelines to be followed.
9. All necessary coordination related to this installation will be done by IA in discussion with the NOIDA
10. Poles and cabinet shall be so designed that all elements of the field equipment can be easily installed and removed.
11. All the poles, junction boxes and necessary infrastructure deployed on the field shall be marked with logo of NOIDA with text (as required). IA shall ensure its provisioning and proper numbering shall be done for all field equipment / inventory. Documentation for the inventory list with numbering and GIS coordinates shall be submitted by IA to NOIDA at regular intervals and also at the time of Go-Live.

5.5 Provisioning hardware and software:

It includes design, supply, installation and commissioning of IT Infrastructure at TCCC with Data Center. This consists of:

- Basic Site preparation services.
- IT Infrastructure including all hardware, application portfolio, licenses etc.
- Centralized platform for traffic data analytics and signal optimization.
- Traffic Command and Control Center (TCCC) infrastructure including operator workstations, joystick controller etc.
- Establishment of LAN and WAN connectivity at TCCC with field components.
- Application integration services with other Government systems.

5.6 Connectivity

The IA shall conduct detailed study for connectivity of all filed devises / cameras considering feasibility, design optimization and reliability. Towards this approach required wired / OFC or wireless RF solutions shall be designed and installed.

In case bidder opts for dedicated OFC connectivity for all filed locations with control rooms RoW charges will be waived off by NOIDA and remains property of NOIDA and NOIDA is free to further use this network for any other purpose. 48 SM armoured OFC shall be used for all locations.

The RI charges will be borne by the bidder only.

5.7 Site Clearance obligations and other relevant permissions:

Prior to starting the site clearance, the IA shall carry out survey of field locations as specified in this RFP, for buildings, structures, fences, trees, existing installations, etc. The authority shall be fully informed of the results of the survey and the amount and extent of the demolition and site clearance shall then be agreed with the authority. The Authority shall take all requisite approvals and take necessary clearances for activities like Right of Way (ROW) etc.

5.8 Electrical works and power supply

The IA need to ensure fluctuation free power supply to the cameras for smooth functioning. Any physical infrastructure, like laying of cables etc. required for providing power supply from the existing junction boxes to the cameras will be done by IA.

Electricity charges for all the buildings/command and control center shall be borne by the authority. The IA shall directly interact with electricity boards for provision of mains power supply at all the identified locations for ITMS field solution before Go-Live. The electricity charges after Go-Live of the project shall be borne by the authority as per actual consumption. The IA shall be responsible to submit the electricity bill including connection charge, meter charge etc. to the electricity board directly. IA shall have to submit the challan of bill submission to authority. Authority will reimburse the amount submitted to the IA after verification in next billing cycle.

5.9 Civil and Electrical works

- a) IA is responsible for carrying out all the civil work required for setting up all the field components of the system including:
 - Preparation of concrete foundation for MS-Poles & cantilevers

- Laying of Pipes complete with fitting
 - Hard soil deep digging and backfilling after cabling
 - Soft soil deep digging and backfilling after cabling
 - Chambers with metal cover at every junction box, pole and at road crossings: To be designed and optimized by selected SI depending on the field conditions. The NOIDA will approve the designs beforehand.
 - Concrete foundation from the Ground for outdoor racks
- b) The IA will be required to provide electricity to the cameras through the aggregation point. Since this component has dependency on approval from local authorities, it is recommended that Bidder plans this requirement well in advance & submits the application to the concerned electricity distribution agency with requisite fees if applicable.
- c) The IA to carry out study and identify locations to provide UPS backup, depending upon power situation across city, so as to meet the camera uptime requirements.
- d) IA is responsible for carrying out all the electrical work required for powering all the components of the system
- e) Electrical installation and wiring shall conform to the electrical codes of India.
- f) IA must make provisions for providing electricity to the cameras (ANPR, PTZ, and Fixed) via the SJB (Surveillance Junction Box) housing the UPS/ SMPS power supply with minimum backup as defined in this RFP, using UPS/inverter.
- g) For the wired Box cameras bidder has to provision for drawing power through PoE (Power over Ethernet), while PTZ cameras would be powered through dedicated power cable laid separately along with STP / SFTP cable.
- h) Registration of electrical connections at all field sites shall be done in the name of IA/NOIDA as agreed and finalized in the contract document.
- i) IA has to also arrange for alternate or redundant power supply in form of UPS etc. in case the primary source of power fails for all surveillance, ITMS equipment as described in the RFP.
- j) IA should house the electricity meters inside the power cabinet as mentioned in the controller Cabinet section as above.

5.10 Surge and Lightning-proof measures

The IA shall comply with lightning-protection, surge-protection and anti-interference measures for system structure, equipment type selection, equipment earthing, power, signal cables laying. The IA shall describe the planned lightning-protection and anti –interference measures in the feasibility report.

Corresponding lightning arrester shall be erected for the entrance cables of power line, video line, data transmission cables. All crates shall have firm, durable shell. Shell shall have dustproof, antifouling, waterproof function and should capable to bear certain mechanical external force.

5.11 Earthing System

All electrical components are to be earthen by connecting two earth tapes from the frame of the component ring and will be connected via several dedicated earth electrodes. The cable arm will be earthen through the cable glands. The entire applicable IT infrastructure i.e. signal junction or command Center shall have adequate earthing. Further, earthing should be done as per Local state National standard in relevance with IS standard. The IA has to provide maintenance free chemical earthing for all electrical equipment to be used in this project.

Earthing should be done for the entire power system and provisioning should be there to earth UPS systems, Power distribution units, AC units, etc. so as to avoid a ground differential. Department shall provide the necessary space required to prepare the earthing pits.

5.12 Junction Box, Gantries, Poles and Cantilever

The Implementation Agency shall provide the Junction Boxes, poles, gantries and cantilever to mount the field sensors like the cameras, traffic sensors, traffic light aspects, active network components, controller and UPS at all field locations, as per the functional and technical requirements given in the RFP.

The Junction Box needs to be appropriately sized in-order to accommodate the systems envisaged at the Junctions. The junction box should be designed with lock and key facility.

5.13 Cabling Infrastructure

The Implementation Agency shall provide standardized cabling for all devices and Subsystems in the field and Traffic Command and Control center.

IA shall ensure the installation of all necessary cables and connectors between the field sensors/devices assembly, outstation junction box, for pole mounted field sensors/devices the cables shall be routed down the inside of the pole and through underground duct to the outstation cabinet. All cables shall be clearly labeled with indelible indications that can clearly be identified by maintenance personnel. The proposed cables shall meet the valid directives and standards. Arrangements pertaining to provision and maintenance of man holes shall be in scope of IA.

5.14 Design, Supply, Installation and Commissioning of the Field Equipment

The Scope includes supply, installation, commissioning and up-gradation (as required) of various field systems which include Adaptive Traffic Control System (ATCS) at Traffic Junctions, Traffic Surveillance, ANPR Cameras, PAS, ECB System, Red Light Violation Detection system, Speed Violation Detection System, ATCC, VMD Boards, PA and ECB and other IT infrastructure required for successful operation of the ITMS.

Based on the survey report approved by authority, the Implementation Agency will undertake the system configuration and customization in line with the changed, improved or specific requirements of NOIDA traffic Police and NOIDA including:

- The Implementation Agency shall be responsible for obtaining all permits and approvals necessary to install the ITMS components from authority. However, authority shall borne the ROW charges and provide permissions from various government departments.
- The Implementation Agency shall be required to submit a detailed installation report post installation of all the equipment at approved locations. The report shall be utilized during the acceptance testing period of the project to verify the actual quantity of the equipment supplied and commissioned under the project.
- Finally approved/accepted solution for each component of ITMS including enforcement system shall be accompanied with "ITMS Configuration" document and the same should be referenced for installation of ITMS including enforcement system at Junctions that are identified within the scope of this project.
- The implementation methodology and approach must be based on the global best practices in-order to meet the defined Service Levels during the operation.
- Best efforts have been made to define major functionalities for each sub- system of ITMS including enforcement System. However, Implementation Agency should not limit its offerings to the proposed solution in this RFP and is suggested to propose any associated item part of RFP BOQ already been given in this tender.

5.15 Adaptive Traffic Control System (ATCS)

The broad scope of work to be covered under Traffic Signal System sub-module will include the following, but is not limited to:

- Preparation of solution architecture as per project blueprint to develop a final BOM for installation of ATCS traffic signaling systems.

- Installation of vehicle detectors, Traffic controllers, Traffic light aspects, poles, cantilevers, Junction Box and other required accessories at specified traffic junctions for successful operation of the ITMS for NOIDA City.
- UPS and power backup systems at traffic junctions.
- Integration of ITMS field infrastructures with the proposed Traffic Signal System software application configuration of traffic signal at each of the junction along with development of signal control plan for individual operations, coordinated signal plan for the junction in sync with the area wide signal plan for different operating conditions. The operating conditions may include different peak and off-peak conditions, special events, contingency plans etc.
- For more details on technical and functional requirements of Traffic Signal System, Implementation Agency should refer to Functional requirement and Technical Requirements in this RFP.

5.16 Traffic Surveillance System

The broad scope of work to be covered under this sub module will include the following, but is not limited to:

- The Implementation Agency shall install surveillance cameras at specified Traffic junctions and locations across the NOIDA city.
- The Implementation Agency shall undertake due diligence for selection and placement of surveillance cameras to ensure the optimized coverage of the traffic junction and location along with all associated junction arms, accuracy of the information captured on the field and for rugged operations.
- The Implementation Agency shall design, supply, and install the traffic surveillance cameras including all wiring connections for the system shall be installed by the Implementation Agency. The Implementation Agency shall supply all of the necessary equipment for the camera operations including camera housings and mountings, camera poles, switches, cabling, and shall make the final connections to the junction box.
- The Implementation Agency shall be responsible for providing the entire necessary IT infrastructure for monitoring, recording, storage and retrieval of the video streams at Traffic Command and Control Center, or any other location as specified by the authority.
- For more details on technical and functional requirement of Traffic surveillance cameras, Implementation Agency should refer to Functional requirement and Technical Requirements in this RFP.

5.17 Face Recognition System (if required)

The broad scope of work to be covered under this will include the following, but is not limited to:

- The Implementation Agency shall install Face Recognition cameras. The details can be referred in Annexure II of this document.
- The Implementation Agency shall supply, configure and deploy Face Recognition licenses.
- The Implementation Agency shall be responsible for providing the entire necessary IT infrastructure for monitoring, recording, storage and retrieval of the video streams at Traffic Command and Control Center.

5.18 ANPR Cameras

The broad scope of work to be covered under this will include the following, but is not limited to:

- The Implementation Agency shall install the ANPR cameras at the specified junctions/locations across the city. This system shall automatically capture the license number plate of the vehicle at these junctions.
- The Implementation Agency shall design, supply, and install the ANPR camera system as defined in the RFPs, all camera accessories such as IR Illuminators, camera housing and mounting shall be installed by the Implementation Agency. The Implementation Agency shall supply all of the necessary equipment for the camera and local processing system, including but not limited to: computers local storage, and ancillary camera equipment, camera poles, warning signs and shall make the final connections to the camera.
- The Implementation Agency shall be responsible for providing the necessary IT infrastructure for detection, analysis, storage and retrieval of the number plate information at Traffic Command and Control Center.
- For more details on technical and functional specifications of ANPR Cameras, Implementation Agency should refer to Functional and Technical Requirements in this RFP.
- The Implementation Agency shall install additional fixed cameras with ANPR capability for detection of violations of wrong side vehicle movements at specified locations across the city.

5.19 Red Light Violation Detection (RLVD) System

- The Implementation Agency shall install the RLVD Systems at specified traffic junctions across the city. This system shall capture the infractions of Red light and stop line violations at these junctions.
- The Implementation Agency shall design, supply, and install the RLVD system as defined in the RFPs, all wiring connections to the traffic signal controllers and to the camera platforms shall be installed by the Implementation Agency. The Implementation Agency shall supply all of the necessary equipment for the camera and detection system, including but not limited to: computers, ancillary camera equipment, camera housings, camera poles, warning signs and shall make the final connections to the camera.
- The solution proposed by the Implementation Agency shall seamlessly integrate with the E- Challan system proposed under the scope of this project. Authority shall facilitate to get access to RTO database. IA shall be required to access the same through use of appropriate APIs.
- The Implementation Agency shall be responsible for providing the necessary IT infrastructure for analysis, storage and retrieval of the infraction information at Traffic Command and Control Center or any other location as specified by the authority.
- For more details on technical and functional requirement of Red Light Violation Detection (RLVD) system, Implementation Agency should refer to Functional and Technical Requirements in this RFP.

5.20 Speed Violation Detection System

The broad scope of work to be covered under this sub module will include the following, but is not limited to:

- The Implementation Agency shall install the Speed Violation Detection Systems at the specified locations across the city. This system shall capture the infractions of speed violations at specified locations.
- The Implementation Agency shall design, supply, and install the speed violation detection system as defined in the RFPs, all wiring connections for the system shall be installed by the Implementation Agency. The Implementation Agency shall supply all the necessary equipment for the camera and detection system, including but not limited to: sensors, computers, ancillary camera equipment, camera housings, camera poles, warning signs and shall make the final connections to the camera.
- The solution proposed by the Implementation Agency shall seamlessly integrate with the E- Challan system proposed under the scope of this project.
- The Implementation Agency shall be responsible for providing all the necessary IT infrastructure for analysis, storage and retrieval of the infraction information at Traffic Command and Control Center or any other location as specified by the Authority.
- For more details on technical and functional specifications of Speed Violation Detection system, Implementation Agency should refer to Functional requirement and Technical Requirements in this RFP.

5.21 e - Challan System

- Currently NIC e-Challan system is getting used for generation of challans against violations captured by installations of HTMS project and Mobile based hand-held solution being used by NOIDA Traffic Police.
- OEM of E-challan system should have successful integration of proposed e-Challan application with Vahan database of NIC in minimum Three Smart City/ ITMS projects/safe city in India. This is to fulfill "One Nation One Challan" requirement.
- It is the responsibility of selected bidder to integrate the exiting systems with the new system and subsequently with NIC e-Challan system to enable the user:
- to have all the data from single interface.
- to automatically generate traffic challans based on infractions of various types received from the installed field equipment
- The IA shall be required to integrate the envisaged ITMS system with the NIC's existing eChallan system running in the city. It is the responsibility of IA to identify the integration requirements and provide APIs for integration.
- All the required stationary and consumables shall be provided by IA at no extra cost. All necessary provisions shall be made by the bidder to accommodate such expenses during bidding. The bidder has to assess the required stationary and consumables and factor the same during bidding.
- Bidder will be responsible for challan printing and dispatching for a period of 1 year after go-live.

5.22 Traffic Violation System

The broad scope of work to be covered under this sub module will include the following, but is not limited to:

- The Implementation Agency shall design, supply, and install the traffic violation cameras as defined in the RFPs, all wiring connections for the system shall be installed by the Implementation Agency. The Implementation Agency shall supply all of the necessary equipment for the camera and detection system, including but not limited to computers,

ancillary camera equipment, camera housings, camera poles, warning signs and shall make the final connections to the camera.

- The solution proposed by the Implementation Agency shall seamlessly integrate with the E- Challan system proposed under the scope of this project.
- The Implementation Agency shall be responsible for providing all the necessary IT infrastructure for analysis, storage and retrieval of the infraction information at Traffic Command and Control Center.
- For more details on technical and functional specifications of Traffic Violation Detection system, Implementation Agency should refer to Functional and Technical Requirements in this RFP.

5.23 Public Address (PA) System and Emergency Call Box (ECB) System

The broad scope of work to be covered under this will include the following, but is not limited to:

- The Implementation Agency shall install IP based Public Address System as part of the information dissemination system at the specified locations in the city. These systems shall be deployed at identified traffic junctions to make public interest announcements. The system deployed shall be IP based and have the capability to be managed and controlled from the TCCC.
- The Implementation Agency shall install Emergency Call Box/Panic at various junctions / locations in the city.
- These systems shall be deployed at identified junction for ease of access by citizens of NOIDA city.
- The Implementation Agency, in consultation with Traffic Police can propose alternate locations apart from the locations mentioned in this RFP for installing the PA system and ECB system where their effectiveness in communicating information about traffic conditions in city will be maximized
- NOIDA shall review and approve the proposed locations. The Implementation Agency shall install the PA and ECB system on the approved locations.
- For more details on technical and functional specifications PA system and ECB system, Implementation Agency should refer to Functional and Technical Requirements in this RFP.

5.24 Environmental Sensors

Air pollution is a serious global problem, especially from automobile exhausts in urban areas; such as SO₂, NO and CO. The broad scope of work to be covered under this will include the following, but is not limited to:

- The Implementation Agency shall install environmental sensors on selective busy junctions for monitoring air quality information. These sensors shall be deployed at identified traffic junctions to collect the data related to air pollution.
- These systems shall integrate these sensors for real time data collection of air quality and transmit to TCCC.
- The Implementation Agency in consultation with NOIDA and Traffic Police make provision to display this information to variable message signboards as and when required or in periodic manner.
- The Implementation Agency is required to mount and integrate environmental sensor for providing air quality, temperature, and humidity. These Sensors should be integrated into the poles. Each environmental Sensor should be able to measure following parameters; Temperature, Humidity, CO, CO₂, NO₂, SO₂, PM_{2.5}, PM₁₀

5.25 Design, Supply, Installation, Testing and Commissioning of Network and Backbone Connectivity

- Network and Backbone Connectivity is an important component of the ITMS project and needs attention in assessment, planning and implementation. It is important not only to ensure that the required connectivity is provisioned within the required timelines but also ensure that it is reliable, secure and supports the required SLA parameters of Latency, Jitter, Packet Loss and Performance.
- The Implementation Agency shall procure bandwidth as a service for the contract duration in order to meet the requirements as defined within the service level agreement (SLA).
- The Implementation Agency should provide detailed network architecture of the overall system, incorporating findings of site survey exercise. The network so envisaged should be able to provide real time data streams to the TCCC. All the components of the technical network architecture should be of industry best standard and assist Implementation Agency in ensuring that all the connectivity SLAs are adhered to during the operational phase.
- The Implementation Agency shall prepare the overall network connectivity plan for this project. The plan shall comprise of deployment of network equipment at the junctions to be connected over network, any clearances required from other government departments for setting up of the entire network.
- Wherever required wireless RF (Radio Frequency) connectivity shall be used considering the site conditions, non-feasibility of laying cables, redundancy and time required to complete the overall connectivity.
- Implementation Agency is also required to do the estimation of bandwidth requirements considering the specifications mentioned in Volume II B of this RFP.

ITMS components	Consideration
Traffic Signal System	<ul style="list-style-type: none"> • Minimum 1 Mbps per controller
PA System, ECB System and Environmental Sensors	<ul style="list-style-type: none"> • Minimum 1 Mbps for each location
Traffic Junctions with the following systems: <ul style="list-style-type: none"> • TSS • ECB and PA system • Traffic Surveillance System and Face recognition • RLVD and ANPR System 	<ul style="list-style-type: none"> • Minimum 12 Mbps per junction
Locations with the following systems: <ul style="list-style-type: none"> • Speed • ATCC • Traffic Violation Cameras 	<ul style="list-style-type: none"> • Minimum 12 Mbps per location

- As per TRAI guidelines, resale of bandwidth connectivity is not allowed. In such a case tripartite agreement (i.e. Annexure 6: Draft Model tripartite Agreement for Resale of Network Bandwidth) may be formed between Purchaser, selected Bidder and Internet Service Provider (s). In order to meet the RFP requirement, Selected Bidder may have to form tripartite agreement with multiple ISPs.

5.26 Design, Supply, Installation, Testing and Commissioning of TCCC

The IA shall also set-up a TCCC at the NOIDA's building in Sector 92, Okhla Bird Sanctuary, NOIDA.

The TCCC shall be established in an approximate area of ~2500 Sq. ft.

It will be Implementation Agency's responsibility to:

- Supply, Install and Commission of IT Infrastructure including site preparation in TCCC. A secured environment will be provided to the Implementation Agency at the TCCC.
- Supply Smart Network Rack, Network Switches, and required accessories at TCCC.
- The Implementation Agency shall establish a state of the art TCCC, the key components of the TCCC will be as follows:
 - a. Video Wall system
 - b. Operator workstations
 - c. IP Phones
 - d. Active Networking Components (Switches, Routers)
 - e. Passive Networking Components
 - f. Electrical Cabling and Necessary LED Illumination Devices for approx. ~2500 Square feet area
 - g. Office Workstations
 - h. UPS (1-hour backup)
 - i. Physical and electronic Security systems for authorized entry (Biometric access control)
 - j. Safety System for protection against Fire, Theft and any other possible damage.
- The Implementation Agency shall provide system integration services to customize and integrate the applications procured through the project. The ITMS and surveillance system applications proposed by the Implementation Agency should have open APIs and should be able to integrate and share the data with other third-party systems already available.
- Indicative IT Infrastructure to be commissioned as part of the ITMS Project at TCCC are as under:
 - Application and System Software (with necessary customization) – Traffic Control System application, ANPR application, Red Light Violation Detection application, Speed Violation Detection application, PA System application, ECB System application.
 - TCCC Application Platform, Traffic Surveillance application, and E-Challan application.
 - RDBMS and OS Licenses
 - Any other device or equipment required to cater to the scope of work mentioned in this scope of work.
- The IA must ensure that redundancy is provided for all the key components to ensure that no single point of failure affects the performance of the overall system.
- The above are only indicative requirements of IT and Non-IT Infrastructure requirements at TCCC. The exact quantity and requirement shall be proposed as part of the technical proposal of the Implementation Agency.
- The IA shall provide integration services to customize and integrate the applications procured through the project. The ITMS and surveillance system applications proposed by the IA should have open APIs and should be able to integrate and share the data with other third-party systems already available or coming up in the near future
- The implementation roll-out plan for hosting of the data center over the cloud shall be approved by authority. The detailed plan shall ensure the scalability, expandability and security.
- The Implementation Agency shall be required to submit a detailed installation report post installation of all the equipment at approved locations. The report shall be utilized during the acceptance testing period of the project to verify the actual quantity of the equipment supplied and commissioned under the project.

5.27 Design, Supply, Installation, Testing and Commissioning of IT Infrastructure at TCCC over the cloud/ On-premise:

The Implementation Agency shall be responsible for deploying the entire ITMS Solution on a Cloud preferably. This RFP proposes specifications of cloud and related services. However, Bidders have the choice to provide On-premise solution (DC) as well. It will be the bidders responsibility to construct the on-premise facility and maintain the SLAs as per the RFP conditions.

If bidder is proposing cloud facility, the IA shall select a MeitY empaneled Cloud Service Provider (CSP). The IA may refer to the details of MeitY empaneled CSPs over, <http://meity.gov.in/content/gi-cloud-meghraj>. It should also comply the empanelment requirements published by the MeitY.

All the requirements/scope of work mentioned in this section shall be the responsibility of the IA. IA shall also ensure that as an IA, the CSP provides the features in the cloud and also performs the scope of work which is directly attributable to CSP.

- i. The IA is required to prepare and submit along with their technical proposal, the details of methodologies & computations for sizing & capacity of storage, compute, backup, network and security.
- ii. There should be sufficient capacity (compute, network and storage capacity offered) available for real time provisioning during any unanticipated spikes in the user load.
- iii. The IA will be responsible for adequately sizing the necessary compute, memory, and storage required, building the redundancy into the architecture (including storage) and load balancing to meet the service levels mentioned in the RFP.
- iv. While the initial sizing & provisioning of the underlying infrastructure (including the system software and bandwidth) may be carried out for the first year; subsequently, it is expected that the IA along with the CSP, based on the growth in the user load (peak and non-peak periods; year-on year increase), will scale up or scale down the compute, memory, storage, and bandwidth requirements to support the scalability and performance requirements of the solution and meet the SLAs.
- v. Ensure redundancy at each level
- vi. IA shall provide interoperability support with regards to available APIs, data portability etc. for Department to utilize in case of:
 - a. Change of Cloud Service Provider,
 - b. Migration back to in-house infrastructure,
 - c. Burst to a different cloud service provider for a short duration, or
 - d. Availing backup or DR services from a different service provider
- vii. To ensure uninterrupted services during migrations if required in future i.e., cloud to Cloud or Cloud to on-prem / dedicated DC) created by the NOIDA or any Agency, all the data formats , platforms, applications, security policies and its compliances shall remain intact and not be compromised. Required support to be provided for such migration/s to NOIDA for workloads pertaining to data, content, storage, Virtual machines and any other hardware / asset/s to the new environment.
- viii. Department retains ownership of all virtual machines, templates, clones, and scripts/applications including application code (all versions) created for the ITMS system, and all licensed purchased under the project during the contractual period. Department retains the right to request (or should be able to retrieve) full copies of these virtual machines at any time.
- ix. The IA/CSP should configure, schedule and manage backups of all the data including but not limited to files, folders, images, system state, databases and enterprise applications:

- a. Perform and store data and file backups consisting of an initial full back up with daily incremental backups for files;
 - b. For the files, perform weekly backups;
 - c. For the databases, perform a twice weekly full database backup, with a three times daily backup of database log files
 - d. Encryption of all backup files and data and management of encryption keys as a service that can be enabled for Department that require such a service.
 - e. Retain database backups for three (3) years on system and thereafter on tapes which can to be restored when required.
- x. IA/CSP shall not delete any data at the end of the agreement (for a maximum of 90 days beyond the expiry of the Agreement) without the express approval of Department.
 - xi. The IA is fully responsible for technology refreshes, patch management and other operations of infrastructure that is in the scope of the IA.
 - xii. The IA should offer dashboard to provide visibility into service via dashboard.

5.28 Capacity Building and Training

Capacity Building is an important aspect of this Project. Implementation Agency has to conduct a proper training need analysis of all the concerned staff and draw up a systematic training plan in line with the overall Project plan. For all these training programs the Implementation Agency has to provide necessary course material and reference manuals (user/maintenance/administration) along with training schedules for all phases. The course and documentation required shall be prepared in both Hindi and English language. The training shall be held at various office/department locations as finalized by Department.

Training shall be provided to the following trainees:

- i. Senior Officers: Officers from NOIDA Traffic Police and other departmental stakeholders
- ii. Functional users: Field staff, the staff of command and control Center and other departmental stakeholders
 - Successful Implementation Agency should ensure that the knowledge transfer to the concerned department staff happens effectively post training.
 - Prepare the training material in consultation with authorities. Detailed training manuals would be prepared by the Implementation Agency prior to the start of the training. Master copies of all training material should be submitted to the Authority for approval.

5.28.1 Training Modules

Training Basic	Type of Training	Content	Applicability	Method of delivery	Trainer
General Training	Induction Training	About ITMS system (concept and components, Organizational structure, Overview of various devices and equipment, Importance, implications, roles and responsibilities, legalities, protocols, expectations, grievance procedure etc.	NOIDA traffic police field staff CCC Operations staff, selected Emergency Response Team officers from Police Department and Admin Staff	Classroom Training	IA
	Basic IT Skills	Desktop operations, User admin, application	Identified NOIDA Traffic Police staff,	Classroom Training	IA

Training Basic	Type of Training	Content	Applicability	Method of delivery	Trainer
		installation, basic computer troubleshooting, Open Office, Operating Systems etc.			
	Soft Skills	Voice quality, call etiquettes, control of conversation, self-management and attitude, methods of questioning, stress management, decision making, managing emergencies, behavioural skills etc.	Identified NOIDA Traffic Police staff	Classroom Training	IA
Functional Training	Role based	Command and Control Center operations, SOPs and usage of technology	Identified NOIDA Traffic Police staff	Classroom Training	IA
	MIS Software	Generation and usage of the following: <ul style="list-style-type: none"> ▶ Officer Login/Logout Reports ▶ Queue Reports ▶ Incident Volume Reports ▶ Incident Investigation reports 	Identified senior officials of NOIDA Traffic Police	Classroom Training	IA
	Train the trainer	<ul style="list-style-type: none"> ▶ Overview of ITMS / surveillance system ▶ Process flow ▶ Role based training for control room ▶ SOPs ▶ Basic soft skills ▶ Emergency Responder training 	Identified NOIDA Traffic Police officers	Classroom training	IA
Administrative Training	Role based	<ul style="list-style-type: none"> ▶ Architecture, Setup and Key Maintenance Tasks ▶ Advanced System Maintenance and Optimization ▶ Troubleshooting and Support ▶ Additional risks, constraints, and assumptions 	Identified NOIDA Traffic Police officers	Classroom training	IA

5.29 Factory Acceptance Testing (FAT)

- The Factory Acceptance Test (FAT) is a process that evaluates the equipment during and after the assembly process by verifying that it is built and operating in accordance with design specifications. Successful Implementation.

- Agency must submit Factory Acceptance Test Certificate for the below mentioned materials before the actual supply of the items. These items include all the IT / Non-IT / Active and Passive components as per RFP

5.29.1 Acceptance testing

- The Department shall review and finalize the detailed acceptance test plan proposed by the Implementation Agency. The authority would also conduct audit of the process, plan and results of the Acceptance Test carried out by the Implementation Agency for both IT and non-IT components. The authority would issue certification of completion for which, authority shall verify availability of all the defined services as per the contract signed between the Implementation Agency and Department. The Implementation Agency shall be required to demonstrate all the services, features, functionalities as mentioned in the agreement.
- Testing and Commissioning shall be carried out before the commencement of Operations.

5.29.2 Partial Acceptance Testing

- Partial Acceptance Test shall involve scrutiny of documents for various IT / Non-IT components to verify if the specifications conform to the technical and functional requirements mentioned in the Tender and subsequent corrigendum.
- Authority reserves right to conduct physical inspection of the equipment delivered to ensure that they arrive at the sites in good condition and are free from physical damage and incomplete shipments and shall return the products to the supplier at the supplier's expenses if required quality is not maintained.
- Physical inspection of hardware will also include physical checking and counting of the delivered equipment in presence of the successful Implementation Agency.
- The equipment will only be acceptable as correct when each received item corresponds with the checklist that will be prepared by the Successful Implementation Agency prior to shipment.
- Any shortfalls in terms of number of items received may render the delivered equipment incomplete

5.30 Third Party Audit

- NOIDA reserves the right to respect and monitor/assess the performance / maintenance of the project systems at any time during the course of the contract. NOIDA may demand and upon such demand being made, NOIDA or its authorized Third Part Agency (TPA) shall be provided with any documents, data, materials or any other information which it may require, to enable it to assess the progress / performance of the project.
- NOIDA also have the right to conduct itself or through another third part audit agency as it may deem fit, an audit to monitor the performance by the bidder on its obligations/functions in accordance with the standards committed to or required by NOIDA undertake to cooperate with and provide to NOIDA / Audit agency. All documents and other details or information as may be required by them for this purpose. Any deviation or contravention identified as a result of such audit / assessment would need to be rectified by the bidder.
- The core objective of TPA is to provide objective assurance to monitor and assess the conformance by the bidder on various project activities and add value to improve the project operations. It would help NOIDA to accomplish the project objective by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of infrastructure, operations service level management and control and governance process.

5.31 Final Acceptance Testing

The final acceptance shall cover overall Supply, implementation, testing and commissioning of the NOIDA ITMS Project, after successful testing by the authority, a Final Acceptance Test Certificate (FAT) shall be issued by the authority to the Implementation Agency.

Prerequisite for carrying out Final Acceptance testing activity:

- Detailed test plan shall be developed by the Implementation Agency and approved by authority. This shall be submitted by Implementation Agency before Final Acceptance Testing activity to be carried out.
- All documentation related to ITMS project and relevant acceptance test document (including IT Components, Non-IT Components etc.) should be completed and submitted before the final acceptance test to the Department.
- The training requirements as mentioned should be completed before the final acceptance test.
- Successful hosting of Application.

The Final Acceptance testing shall include the following:

- All hardware and software items must be installed at respective sites as per the specification.
- Availability of all the defined services shall be verified.
- The Implementation Agency shall be required to demonstrate all the features / facilities / functionalities as mentioned in the RFP.
- The Implementation Agency shall arrange the test equipment required for performance verification and will also provide documented test results.

5.32 System Documents and User Manuals

- The Implementation Agency shall provide documentation, which follows the ITIL (Information Technology Infrastructure Library) standards or IEEE/ISO Acceptable Documentation Standards.
- The documentation should be submitted as the project undergoes various stages of implementation and provide all traceability documentation on changes done on the IT components during the course of the implementation.
- Indicative list of documents includes:
 - Site assessment report should provide comprehensive detailing of existing and envisaged infrastructure and requirements in the project.
 - Project Plan should provide micro level activities with milestones and dependencies etc.
 - Original manuals (installation, training etc.) from OEMs.
 - Training Material will be provided which will include the presentations used for trainings and also the required relevant documents for the topics being covered.
 - The Implementation Agency shall be responsible for preparing detailed process documentation related to the operation and maintenance of each and every component of the ITMS Project.
 - The Implementation Agency shall document all the installation and commissioning procedures and provide the same to the authority within one week of the commissioning of the project.
 - Manuals for configuring of switches, routers, etc. shall be provided by the selected Implementation Agency.

- Complete inventory list of all the equipment deployed at field level with proper numbering and GIS coordinates.

The Implementation Agency shall be responsible for documenting configuration of all devices and keeping back up of all configuration files for the complete project tenure, so as to enable quick recovery in case of failure of devices.

5.33 Operations and Maintenance during contract period

Success of the Project would lie on how professionally and methodically the entire project is managed once the implementation is completed. IA is required to depute a dedicated team of professionals to manage the Project and ensure adherence to the required SLAs.

The IA shall provide O&M services for all project related components installed as part of ITMS project during the Contract Period, including one (1) year of warranty period after "Go-Live".

The activities to be carried out during the contract period shall include, but not limited, to the following:

- Monitor the operation of ITMS and take suitable interventions as required such as change of signal plan, change of signal timing from TCCC enabling green corridor etc. Periodic change of signal plans and other configurations parameters on directions of Authority.
- Monitor health of traffic signal and camera equipment and initiate immediate corrective action in any fault.
- Undertake configuration management for all systems.
- Undertake system admin, database admin, back up, archival, network admin activities.
- Comprehensive maintenance of all equipment/sub-system during Contract period.

5.34 Project Management and Operation Maintenance

The Implementation Agency will be required to provide facilities management services to support the authority / Police department officials in performing their day-to-day functions related to this system.

Implementation Agency is required to depute a dedicated, centralized project management and technical team (except for Project Director) for the overall Project management and interaction with authority and other departments during the time of Implementation. The project management team of IA will work in tandem with the Project PMU set up by the Department during the entire contract duration.

5.35 Indicative resource requirement

Below is the indicative resource requirement for centralized administration of the Project

Sr. No.	Role	Number of Resources	Deployment Phase	Number of Resources	Deployment Phase
		Implementation Phase		O&M Phase	
1	Project Director	1	0.25%	-	-
2	Project Manager	1	100%	1	50%
3	Cloud solution architect (IT, DC/CC infrastructure)	1	30%	-	-
4	Solution architect (ITMS/ CCTV Surveillance)	1	70%	-	-
5	Technical Lead cum Trainer (IT and Surveillance)	1	25%	-	-
6	Site implementation/ installation team	20	100%	-	-

Sr. No.	Role	Number of Resources	Deployment Phase	Number of Resources	Deployment Phase
		Implementation Phase		O&M Phase	
7	System and Network Administrator	1	40%	-	-
8	Database Administrator	1	25%	-	-
9	IT Administrator	-	-	1	60%
10	Site maintenance team	-	-	3	100%
11	IT Helpdesk team	-	-	3 person per shift with 1 back-up	100%

The above-mentioned manpower requirement is minimum and if the Implementation Agency believes that to meet the SLAs, additional resources are required, the same may be provided by the Implementation Agency. NOIDA can suggest changes in the aforementioned resource requirement as per the requirement. It is the IA's responsibility to identify and deploy the resources during the O&M phase.

The Implementation Agency is required to provide suitable manpower to support monitoring of the data feeds at Traffic Command and Control Center and support other departments in operationalization of the ITMS project. Implementation Agency shall be required to provide such manpower meeting the following requirements:

- All such manpower shall be without any criminal background /record.
- Authority reserves the right to carry out background check of the personnel proposed on the Project for verification of criminal record, at the beginning of deployment or during deployment.
- Implementation Agency shall have to replace any person, if not found suitable for the job.
- Operational Manpower shall work in 3 shifts, with no person being made to see the feeds for more than 8 hours at a stretch.
- Detail operational guideline document shall be prepared during implementation which shall specify detail responsibilities of these resources and their do's and don'ts.

5.36 Network Monitoring Services through EMS

The activities shall include:

- Implementation Agency shall provide services for management of NOIDA ITMS Project to maintain performance at optimum levels on a 24 x 7 basis.
- Implementation Agency shall monitor and administer the network.
- Implementation Agency shall create and modify VLAN, assignment of ports to appropriate applications and segmentation of traffic.
- Implementation Agency shall carry out break fix maintenance of the LAN cabling or maintenance work requiring civil work.

5.36.1 Network Management

The objective of this service is to ensure continuous operation and upkeep of the LAN and WAN infrastructure of the project including all active and passive components. The selected Implementation Agency shall be responsible to coordinate with Network Service Provider for network related issues between Traffic Command and Control Center, Data Center, and Traffic Junctions and other sensor locations. The services to be provided for Network

Management should include all Network Monitoring, server Monitoring including application, database monitoring and Service Management. The solution should be an integrated, modular and scalable solution to provide comprehensive fault management, performance management, traffic analysis, reporting, SLA monitoring and resolution of issues and business service management, IT service desk\ help desk \trouble ticketing system & SLA monitoring functionality . The services to be provided for Network Management include:

- Ensuring that the network is available 24x7x365 as per the prescribed SLAs for the contract period.
- Attending to and resolving network failures and snags.
- Support and maintain the overall network infrastructure including but not limited to LAN passive components, switches etc.
- Configuration and backup of network devices including documentation of all configurations.
- 24x7x365 monitoring of the network to spot the problems immediately.
- Provide information on performance of Ethernet segments, including capacity utilization and error statistics for the segment and the top-contributing hosts, WAN links and routers.
- Ensuring timely information to NOIDA and concerned departments pertaining to issues of City Network backbone.

5.36.1.1 Scope of Integration for ITMS Components

The Implementation Agency shall provide open APIs / SDKs / web services and extend all necessary support for integration with TCCC as per directive of Authority to display on Variable Message Display located across different locations for public information and decision-making support system. Implementation Agency shall also share to create / send command for providing green channel in case of emergency by the Authority.

Sr. No.	Components	Data Requirement	Integration	Purpose
1	Traffic Signal System	Real time traffic Density at each Traffic junction	Variable Message Sign System, CCC Application	Reduce Transit Time, Smooth Flow of traffic, Centralized Traffic Management development to reduce the transit time and Maintenance of Traffic Signals to inform Citizens about real time traffic situation
		ITMS Software command feeds	NOIDA Command and Control System	To create Green channel in case of emergency and VIP movement
2	Automatic Number Plate Recognition (ANPR)System	Registration Number of the vehicle, Over view snapshot of the vehicle and Video Clip of the vehicle	Video Management System and e challan system	Database of the vehicle entering the city, generate alert for suspicious vehicle, Track the vehicle in case of crime
3	Traffic Surveillance Cameras	Live Video Feeds	Video Management System and Variable Message Sign, CCC Application	Monitoring government property and other services
4	Traffic violation detection Cameras	Information and video feed for traffic violation	Video Management System, Variable Message Signboards, CCC application and e	Monitoring and controlling traffic violation. Generating e challans

Sr. No.	Components	Data Requirement	Integration	Purpose
			challan system	
5	Environmental Sensors	Air Quality and water flooding	NOIDA Command and Control System	Monitoring air pollution and water flooding at various locations and Junctions
6	PA System and Variable Message Signboard Displays	Visual and Audio notification and announcements	NOIDA Command and Control System	To make general or specific announcements and send notifications related to traffic and safety roles in periodic, pre-defined or rule / demand-based method.

5.37 Hand-over of the system before contract expiry

Implementation Agency will supply to the Department. The following before the expiry of the contract:

- Information relating to the current services rendered and data relating to the performance of the services;
- Entire documentation relating to various components of the Project, any other data and confidential information related to the Project;
- All other information (including but not limited to documents, records and agreements) relating to the products and services related to the project
- Enable Police Department and its nominated agencies, or its replacing Successful Implementation Agency to carry out due diligence in order to transition the provision of the Project Services to authority or its nominated agencies, or its replacing Successful Implementation Agency (as the case may be).
- The Implementation Agency shall provide the Department or its nominated agency with a recommended exit management plan ("Exit Management Plan").
- Promptly during exit on reasonable request by the NOIDA the Implementation Agency shall provide access to and copies of all information held or controlled by them which they have prepared or maintained in accordance with this agreement relating to any material aspect of the services (whether provided by the Implementation Agency or sub-contractors appointed by the Implementation Agency).
- The NOIDA shall be entitled to copy of all such information. Such information shall include details pertaining to the services rendered and other performance data.
- The Implementation Agency shall permit the NOIDA to have reasonable access to its employees and facilities, to understand the methods of delivery of the services employed by the Implementation Agency and to assist appropriate knowledge transfer.

5.38 Other requirements

The IA should ensure the following (not limited to) while implementation of project:

- Implementation Agency to ensure that for operation and maintenance team has the uniform with the identity card, safety shoes, helmet, Neon Jacket sets.
- Implementation Agency will have to carry his own four-wheeler and a ladder of 15 feet length to carry out implementation and maintenance work (including transportation of items required for Project) during the Contract Period. All the expenses pertaining to vehicle such as driver's expenses, fuel, lubricants, maintenance, etc. will have to be borne by the Implementation Agency.
- Implementation Agency will pay the charges related to Electric Meter, recurring electricity charges. These charges will be then reimbursed by Department. Fuel for DG shall also be provided by authority.
- Implementation Agency will implement the Biometric attendance system for the attendance of Project member proposed in this document at the command and control center. The Implementation Agency will share the attendance report with the client at the end of the month. The quarterly payment will be disbursed as per the SLA requirements.
- OEM should have valid BIS certification where ever applicable as per RFP for Indian manufacturing unit in the OEM name whose product is been quoted. OEM should be able to produce all supporting documents to the purchaser on ask and can also display the same over its website.
- The proposed core ITMS application OEM should have security certification from any CERT-In empanelled agencies in India, to ensure cyber security & protection of data from security threats at local and central application level.
- It should be the SI responsibility to get the VAPT and Penetration testing done from any of CERT-IN empanelled agencies before the Go-Live of the ITMS application. The bidder shall not be issued Go-Live certificate without issuance of VAPT and Penetration testing certificates.
- Successful Implementation Agency (IA) needs to supply new traffic Aspects wherever applicable. All existing traffic signals should be replaced by new signals and cost of new traffic signals should be included in bidder's proposal. However, IA can reuse existing Traffic Light Poles and Cantilevers only, if desired by IA. Minimum Quantity of Traffic Aspects is as below: Traffic Light Aspects (Red) - 448 Nos, Traffic Light Aspects (Amber) - 448 Nos, Traffic Light Aspects (Green Arrow)- 861 Nos, Pedestrian (Stopman & Wakman) - 153 Nos, Vehicle Count Down Timer - 153 Nos.

5.39 Video Analytics for the project:

The Implementation Agency shall have to provide a robust video analytics software under this project. The video analytics should have an AI feature and preferably should be on open solution platform. The detailed specifications are mentioned in Volume IIB of this RFP document.

6 Project Deliverables and Payment Plan

Sl. No.	Item	Date of Submission	Deliverables	Payment (in INR) of contract value
1	Mobilization advance against BG	After contract signing		10% (To be adjusted in pro-

Sl. No.	Item	Date of Submission	Deliverables	Payment (in INR) of contract value
				rata basis equally in all payments made against invoices)
2	Inception Report	T + 1 month	Inception Report includes (not limited to): 1. Site Survey 2. Validation of existing BoQ 3. Project Plan 4. Risk Mitigation Plan 5. Approach and Methodology 6. Management and Operational Planning 7. Team deployment plan 8. Quality assurance and control process 9. Exit Management Plan	25%
3	Setting up of command and control center with all respect: 1. Civil 2. Non-IT Infrastructure 3. IT Infrastructure including networking/ cabling	T + 5 months	Installation reports from assigned authority	
4	Supply, Installation and Commissioning of components (Phase 1+Phase 2+ Phase 3)			35%
4A	Phase 1 - At identified 20 sites	T + 5 months		10%
	Delivery of all hardware and other equipment required to commission the identified locations		Hardware acceptance testing report	5%
	Installation and commissioning of hardware and network at identified locations and CCC		1. Installation reports from assigned authority 2. Commissioning report 3. Testing and Quality assurance report 4. Go-Live Report	5%
	Testing and Quality assurance			
	Phase 1 Go-Live of identified locations and CCC (including integration with CCC with cloud)			
4B	Phase 2 - At identified 32 sites	T + 7 months		10%

Sl. No.	Item	Date of Submission	Deliverables	Payment (in INR) of contract value
	Delivery of all hardware and other equipment required to commission the identified locations		Hardware acceptance testing report	5%
	Installation and commissioning of hardware and network		1. Installation reports from assigned authority	5%
	Testing and Quality assurance		2. Commissioning report	
	Phase 2 Go-Live		3. Testing and Quality assurance report 4. Go-Live Report	
4C	Phase 3 - At remaining 32 sites	T + 9 months		15%
	Delivery of all hardware and other equipment required to commission the identified locations		Hardware acceptance testing report	5%
	Installation and commissioning of hardware and network		1. Installation reports from assigned authority	10%
	Testing and Quality assurance		2. Commissioning report	
	Phase 3 Go-Live		3. Testing and Quality assurance report 4. Go-Live Report	
5	Operation and Maintenance	T + 69 (5 years & 9 months)	Monthly status reports Audit log reports SLA reports	40% in equated quarterly instalments

* Where T is the date of signing of contract

** The mobilization advance will be adjusted in pro-rata basis in remaining payments.

7 Annexure A: Tentative Bill of Material

Below are the tentative bill of material and its quantities. However, IA is encouraged to conduct detailed site survey to validate the correctness of the required quantities of all the items listed or not listed below. IA may notify the same to NOIDA based on their findings before or during the pre-bid meeting to make necessary amendments as necessary. Considering the dynamics of complex solutions and expected outcome of the overall project, variation of $\pm 10\%$ quantities mentioned in below table is anticipated. IA shall keep all the necessary preparedness to cater for the variation in quantities when and where required during or post project implementation.

Table 1:

(A) Hardware - Field Equipment			
Sl. No	Particulars	Qty	Unit
Surveillance and ITMS System			
1	2MP IP Outdoor PTZ Camera, 24VAC, power supply, Pole mount bracket and all other accessories as per specifications.	76	No.
2	2MP IP Fixed Box / bullet HD Camera with varifocal lens, housing for outdoor use and all other accessories as per specifications.	278	No.
3	ANPR Camera and all other accessories as per specifications.	693	No.
4	Speed detection Cameras / Radar with LPU, Software as per specifications.	18	No.
5	LPU for ANPR / Video analytics Camera and all other accessories as per specifications.	164	No.
6	ATCS traffic controller and all other accessories as per specifications including traffic lights, Common Device timer (CDT).	40	No.
7	Environment sensor and all other accessories as per specifications.	25	No.
8	Public Announcement system for outdoor use and all other accessories as per specifications for all junction with min 205 speakers, Emergency Call Box for all junctions and suitable amplifiers and controllers etc to make the system complete as per RFP.	82	No.
9	Variable Message Signboard (3.8 by 1.9 mtr) and all other accessories as per specifications.	10	No.
10	Variable Message Signboard (2.8 by 1.9 mtr) and all other accessories as per specifications.	10	No.
11	Junction Box IP 66 Outdoor for Power Supply, Network Switch and all other accessories as per specifications.	143	No.
12	Small Junction Box IP 66 Outdoor for ANPR LPU and all other accessories as per specifications.	273	No.
13	Online UPS with 1 hours backup with stand at each junction Box(as per load requirement) and all other accessories as per specifications.	143	No.
14	4/8/16/24 Port Industrial Grade Managed network switch at each junction Box (PoE) and all other accessories as per specifications.	143	No.
16	Pole structure for Cameras (Considering 9m/6m poles + foundation bolts as per requirement and all other accessories as per specifications.	76	No.

(A) Hardware - Field Equipment			
18	Pole with Arm/ cantilever and all other accessories as per specifications.	272	No.
20	Gantry for Camera /Variable Message Signboard and all other accessories as per specifications.	20	No.
Passive components (wired network)			
21	CAT-6 24 port Jack Panel	143	No.
22	CAT-6 Patch cords 1 mtr	1061	No.
23	CAT-6 Patch cords 3mtrs	1061	No.
24	6 Core Rack Mounted LIU with Splice tray and all other accessories as per specifications.	143	No.
25	RJ 45 connectors and all other accessories as per specifications.	2000	No.
26	Voltage Surge Suppressor for junction Box and all other accessories as per specifications.	143	No.
27	100m Power Cable till Junction Box and all other accessories as per specifications.	143	No.
28	CAT-6 Cable for Camera to Junction Box and all other accessories as per specifications.	84000	Mtr
Civil & Electrical Work			
29	Civil work for Cameras junction and all other accessories as per specifications.	84	Job
30	Civil work for Variable Message Signboard junction and all other accessories as per specifications.	20	Job

Table 2:

(B) Hardware - Command & Control Centre			
Sl. No	Particulars	Qty	Unit
Surveillance and ITMS System			
1	Workstation Desktop surveillance systems with display and all other accessories as per specifications.	10	No.
2	Laser based video wall and all other accessories as per specifications.	1	No.
3	Keyboard Joystick to control PTZ Cameras and all other accessories as per specifications.	3	No.
4	Semi dome cameras for internal surveillance and all other accessories as per specifications.	10	No.
5	LED TV for war room, cafeteria, reception and all other accessories as per specifications.	3	No.
6	PSTN / IP phones for each desk, meeting room, war room, cafeteria and all other accessories as per specifications.	5	No.
7	24 port Gigabit, Layer 3 Switch and all other accessories as per specifications.	2	No.
8	PA system Dialling Console with license	2	No.
9	Diesel Generator (30 KVA) and all other accessories as per specifications.	2	No.
10	UPS 30 KVA with 1 Hr SMF battery backup (1+1 Redundancy) and all other accessories as per specifications.	2	No.
11	Printer for printing challans	5	No.
12	Site Preparation Cost (50x 50 ft area approximately)		
12.1	Furniture & fixtures (tables, chairs, cubicle	1	No.

(B) Hardware - Command & Control Centre			
	separator etc		
12.2	Carpeting including war room, meeting room etc.	1	No.
12.3	Electrical lighting & fittings and all other accessories.	1	No.
12.4	Civil work in all respects to make the system complete.	1	No.
12.5	Access control (PIN+PASSWORD + BIOMETRIC Option) with Iris and figure print options	1	No.
12.6	Addressable fire detector Fire detector & proofing with integration with building fire Panel.	1	No.
12.7	Air conditioning (2 Ton each)	5	No.

Table 3:

C) Cloud and Infrastructure			
Sl. No	Particulars	Qty	Unit
1	Cloud requirement for complete solution including Servers, Firewall, Storage, Networking components and Infrastructure during implementation	1	Lot
2	Cloud requirement for complete solution including Servers, Firewall, Storage, Networking components and Infrastructure during 1st Year O&M	1	Year
3	Cloud requirement for complete solution including Servers, Firewall, Storage, Networking components and Infrastructure during 2nd Year O&M	1	Year
4	Cloud requirement for complete solution including Servers, Firewall, Storage, Networking components and Infrastructure during 3rd Year O&M	1	Year
5	Cloud requirement for complete solution including Servers, Firewall, Storage, Networking components and Infrastructure during 4th Year O&M	1	Year
6	Cloud requirement for complete solution including Servers, Firewall, Storage, Networking components and Infrastructure during 5th Year O&M	1	Year

Note: Bidder needs to provide firewalls at Control room, In case IA / Bidder is providing On premise or hybrid system. Please refer the specs mentioned in the RFP.

Table 4:

(D) Software			
Sl. No	Particulars	Qty	Unit
Surveillance Software			
1	Video Management Software	1	Base License
2	Video Management Software	360	Per Camera Licence
3	Facial Recognition Software	2	Per camera License
ITMS			
4	TCCC Platform	1	License
5	Video Analytics Software	1	Base License
6	Video Analytics Software (with multiple analytics, as red light violation, No helmet, Triple riding, no parking and wrong side driving etc)	275	License
7	ANPR, RLVD, analytics Base license	1	Base License
8	ANPR per camera license	693	Per Camera Licence
9	Red light violation software	150	Per Camera Licence
10	e-Challan software	1	License
11	Variable message signboard software	1	License
12	Public announcement system	82	License
13	ATCS application Software	1	License
14	Environment Sensor Software	1	License
15	Integration With RTO DB and other interfaces	1	
Other Software			
16	Server Virtualization Software including hardware (requisite hardware including servres, storage, network racks, firewall etc) under this line item.	1	License
17	Server OS	50	License
18	Anti-Virus & Theft protection	1	License
19	Enterprise Management System (EMS/NMS)	1	Licence
20	Data Base Software	1	License

Table 5:

E) Network			
Sl. No	Particulars	Qty	Unit
1	Connectivity Charges 84 Junction	5	Years
2	Connectivity Charges between DC (or over Cloud) and TCCC (Primary and secondary) for 1 years	5	Years

Table 6:

(F) Manpower Services			
Sl. No	Particulars	Qty	Unit
Implementation Phase			
1	Project Director 01 Nos	1	No.
2	Project Manager 01 No. for 06 Months	6	Months
3	Cloud Solution Architect (IT, DC & C&C Infrastructure) 01 No. for 03 Months	3	Months
4	Solution Architect (Network and CCTV surveillance system) 01 No. for 05 Months	5	Months
5	Technical Lead Cum Trainer (IT and Surveillance industry) 01 No. for 06 Months	6	Months
6	Site implementation/installation team consisting of 20 No. for 06 Months	120	Months
7	System and NW Administrator 01 No. for 04 Months	4	Months
8	Database Administrator 01 No. for 03 Months	3	Months
O&M Phase			
9	Project Manager	60	Months
10	IT Administrator	60	Months
11	Site Maintenance team of 3 members for 5 years	60	Months
12	IT Helpdesk personal	60	Months

Table 7:

(G) Annual Maintenance Contract (AMC) for ITMS System			
Sl. No	Particulars	Qty	Unit
AMC after completion of warranty period of 1 year which includes comprehensive repair and maintenance of all equipment, hardware and software with deployment of technical mobile maintenance team, including insurance all the hardware against theft, accident, physical damage, force majeure etc.			
1	1st Year	1	Year
2	2nd Year	1	Year
3	3rd Year	1	Year
4	4th Year	1	Year

Table 8:

(H) Existing HTMS O&M			
Sl. No	Particulars	Qty	Unit
Annual Maintenance Contract (AMC) for Existing HTMS System			
1	AMC charges	12	Months

8 Annexure B: Junction-wise details

Sr. No.	Junction Name	Junction Type (Rotary / Four way / Three Way / Two Way / Y Shaped)	Latitude	Longitude	Traffic signal installed (Yes/No)	Cameras				Infrastructure					VMS & VA Software / Licences												Others	
						Fixed	PTZ	Speed	ANPR	Poles	Arms / cantilever	Gantry	Junction Box	ANPR LPU)	ATCC	No helmet Detection	Triple Riding	RLVD	Wrong side driving	No parking	FRS	Speed Violation	Free left	Seat Belt	PA Speaker	VMD		
1	Hajipur Chouraha	Four way crossing	28.53061	77.362235	Yes	3	1	0	11	1	4	0	1	4	3	4	4	3	4	4	0	0	0	0	1	0		
2	Enfield (Sec-63)	Three way	28.6236	77.38135	No	3	1	0	6	1	3	0	1	3	0	3	3	0	3	3	0	0	0	0	1	0		
3	ABCD Chouraha (Sec-63)	Four way crossing	28.61834	77.38086	Yes	4	1	0	8	1	4	0	1	4	4	4	4	4	4	4	0	0	0	0	1	0		
4	Okayo Chowk (Sec-62)	Four way crossing	28.61798	77.374	Yes	4	1	0	8	1	5	0	2	4	4	4	4	4	4	4	0	0	4	0	1	1		
5	12-22-56 Tiraha	Three way	28.59001	77.344164	Yes	3	1	0	10	2	2	1	2	3	3	3	3	3	3	3	0	0	2	0	1	1		
6	Stadium Chouraha	Four way crossing	28.59024	77.336275	Yes	4	1	0	11	1	5	0	2	4	4	4	4	4	4	4	0	0	4	0	1	1		
7	Golchakkar IOCL	Four way crossing	28.58601	77.310932	Yes	4	1	0	8	1	4	0	1	4	4	4	4	4	4	4	0	0	0	0	1	0		
8	Jhoondpura Chouraha	Four way crossing	28.59779	77.329448	Yes	4	1	0	7	1	5	0	2	4	4	4	4	4	4	4	0	0	0	0	1	1		
9	Harola Chouraha	Four way crossing	28.58398	77.319401	Yes	4	1	0	7	1	4	0	1	4	4	4	4	4	4	4	0	0	0	0	1	0		

Sr. No.	Junction Name	Junction Type (Rotary / Four way / Three Way / Two Way / Y Shaped)	Latitude	Longitude	Traffic signal installed (Yes/No)	Cameras				Infrastructure					VMS & VA Software / Licences												Others	
						Fixed	PTZ	Speed	ANPR	Poles	ver	Gantry	n Box	LPU)	ATCC	on	Riding	RLVD	driving	g	FRS	Violati	Free left	Seat Belt				
10	DM Chouraha	Four way crossing	28.57929	77.330479	Yes	4	1	0	8	1	4	0	1	4	4	4	4	4	4	4	0	0	0	0	1	0		
11	Rai Residency (Sec 19/20)	Four way crossing	28.57606	77.326226	Yes	4	1	0	8	1	4	0	1	4	4	4	4	4	4	4	0	0	0	0	1	0		
12	Shashi Chowk (Golf Station)	Four way crossing	28.56804	77.347207	Yes	4	1	0	12	1	4	0	1	4	4	4	4	4	4	4	0		4	0	1			
13	12-22 Chouraha	Four way crossing	28.59367	77.340922	Yes	4	1	0	10	1	4	0	1	4	4	4	4	4	4	4	0	0	2	0	1	0		
14	JSS Tiraha	Three way	28.61079	77.36075	No	3	1	0	6	1	3	0	1	3	0	3	3	0	3	3	0	0	2	0	1	0		
15	D S Group Tiraha (Sec-66)	Three way	28.60094	77.38917	yes	3	1	0	7	1	3	0	1	3	2	3	3	2	3	3	0	0	1	0	1	0		
16	Transport Nagar Tiraha (Sec- 66)	Four way crossing	28.60858	77.38984	No	4	1	0	8	1	4	0	1	4	0	4	4	0	4	4	0	0	0	0	1	0		
17	Hoshiyarpur Tiraha	Three way	28.582530	77.366298	Yes	3	1	0	7	1	3	0	1	3	3	3	3	3	3	3	0	0	2	0	1	0		
18	Eldico Chouraha	Four way crossing	28.57164	77.386685	Yes	4	1	0	12	1	4	0	1	4	4	4	4	4	4	4	0	0	0	0	1	0		
19	Sector 91 T Point	Three way	28.50902	77.390083	No	3	1	0	9	1	3	0	1	3	0	3	3	0	3	3	0	0	0	0	1	0		

Sr. No.	Junction Name	Junction Type (Rotary / Four way / Three Way / Two Way / Y Shaped)	Latitude	Longitude	Traffic signal installed (Yes/No)	Cameras				Infrastructure					VMS & VA Software / Licences												Others	
						Fixed	PTZ	Speed	ANPR	Poles	ver	Gantry	n Box	LPU)	ATCC	on	Riding	RLVD	driving	g	FRS	Violati	Free left	Seat Belt	Speake	VMD		
20	Vasundhara Enclave Boundary	Three way	28.60263	77.321475	Yes	2	1	0	4	1	3	0	2	2	0	2	2	0	2	2	0	0	0	0	1	1		
21	Degree College Tiraha	Three way	28.57261	77.353063	Yes	3	1	0	9	1	3	0	1	3	3	3	3	3	3	0	0	2	0	1	0			
22	Below Mahamaya (Speed)	Two way	28.55609	77.325293	No	4	0	6	12	1	4		1	4		4	4	0	4	2	0	6	0	0	1			
23	HTMS (Old) to 44 Golchakra	Rotatory four way	28.5561	77.326772	No	3	1	0	7	1	3	0	1	3	0	3	3	0	3	3	0	0	0	0	1	0		
24	City Centre	Two way	28.57467	77.356107	No	2	1	0	6	0	2	0	1	2	0	2	2	0	2	2	0	0	0	0	1	0		
25	Sector 18 Metro	Two way	28.57085	77.326305	No	2	0	0	6	0	3	0	2	3	0	2	2	0	2	2	0	0	0	0	1	1		
26	Sector 52 Metro	Two way	28.58648	77.372859	No	2	1	0	6	0	3	0	2	2	0	2	2	0	2	2	0	0	0	0	1	1		
27	Electronic metro	Three way	28.62791	77.37436	No	3	1	0	9	1	3	0	1	3	0	3	3	0	3	3	0	0	2	0	1	0		
28	Sector 76 metro	Two way	28.56497	77.379724	No	4	0	0	6	0	2	0	1	2	0	2	2	0	2	2	0	0	0	0	1	0		
29	Sector 51 metro	Two way	28.58553	77.375484	No	2	1	0	6	0	2	0	1	2	0	2	2	0	2	2	0	0	0	0	1	0		
30	Sector 15 metro	Two way	28.58501	77.311886	No	4	0	0	6	1	2		1	2	0	2	2	0	2	2	0	0	0	0	1	0		

Sr. No.	Junction Name	Junction Type (Rotary / Four way / Three Way / Two Way / Y Shaped)	Latitude	Longitude	Traffic signal installed (Yes/No)	Cameras				Infrastructure					VMS & VA Software / Licences												Others	
						Fixed	PTZ	Speed	ANPR	Poles	ver	Gantry	n Box	LPU)	ATCC	on	Riding	RLVD	driving	g	FRS	Violati	Free left	Seat Belt	Speake	VMD		
31	Sector 62 Metro	Two way	28.61691	77.373606	No	2	1	0	6	0	2	0	1	2	0	2	2	0	2	2	0	0	0	0	1	0		
32	Fortis metro	Three way	28.61777	77.373555	No	3	1	0	7	1	3	0	1	3	0	3	3	0	3	3	0	0	2	0	1	0		
33	Prateek Vistaria Chouraha	Four way crossing	28.57207	77.393841	No	4	1	0	8	1	4	0	1	4	0	4	4	0	4	0	0	0	0	0	1	0		
34	T Series	Four way crossing	28.58016	77.322587	Yes	4	1	0	10	1	5	0	2	4	3	4	4	3	3	4	0	0	0	0	1	1		
35	Rajnigandha Chouraha	Four way crossing	28.57723	77.318778	Yes	4	1	0	8	1	5		2	4	4	4	4	4	4	4	0	0	0	0	2	1		
36	Atta Peer	Four way crossing	28.57381	77.322998	Yes	4	1	0	11	1	3	1	1	4	4	4	4	4	4	4	0	0	2	0	1	0		
37	Adobe Chouraha	Four way crossing	28.58985	77.34457	Yes	4	1	0	9	1	4	0	1	4	4	4	4	4	4	4	0	0	3	0	1	0		
38	HCL Chouraha (Sec-125)	Four way crossing	28.54921	77.332366	Yes	4	1		14	1	2	2	1	4	4	4	4	4	4	4	0	0	0	0	1	0		
39	Samet 76 Internal Road	Four way crossing	28.57118	77.378892	No	4	1	0	12	1	4	0	1	4	0	4	4	0	4	4	0	0	0	0	1	0		
40	Spice Mall Chouraha	Four way crossing	28.58636	77.340059	Yes	4	1	0	8	1	4	0	1	4	4	4	4	4	4	4	0	0	0	0	1	0		
41	Chilla gate for Noida entry	Two way	28.58278	77.301991	No	2	1	4	6	1	3	0	1	2	0	2	2	0	2	2	2	4	0	0	1	2		
42	Amrapali Golchakkar	Rotary three	28.5541	77.3268	No	3	1	0	7	1	3	0	1	3	0	3	3	0	3	3	0	0	0	0	1	0		

Sr. No.	Junction Name	Junction Type (Rotary / Four way / Three Way / Two Way / Y Shaped)	Latitude	Longitude	Traffic signal installed (Yes/No)	Cameras				Infrastructure					VMS & VA Software / Licences												Others	
						Fixed	PTZ	Speed	ANPR	Poles	ver	Gantry	n Box	LPU)	ATCC	on	Riding	RLVD	driving	g	FRS	Violati	Free left	Seat Belt	Speake	VMD		
		way	2	37																								
43	HCL Chouraha (Sec-125)	Four way crossing	28.54921	77.332366	Yes	4	1	0	14	1	2	2	1	4	4	4	4	4	4	4	0	0	0	0	1	0		
44	Mayur School Chouraha	Rotary four way	28.54475	77.337321	No	4	1	0	8	1	4	0	1	4	0	4	4	0	4	4	0	0	0	0	1	0		
45	Gejha Tiraha	Three way	28.53523	77.391243	Yes	3	1	0	9	1	3	0	1	3	3	3	3	3	3	3	0	0	2	0	1	0		
46	NSEZ Tiraha	Three way	28.5344	77.397691	Yes	3	1	0	7	1	3	0	1	3	3	3	3	3	3	3	0	0	2	0	1	0		
47	Parthala Golchakkar	Rotatory four way	28.5986	77.405114	No	4	1	0	12	1	5	0	2	4	0	4	4	0	4	4	0	0	0	0	1	1		
48	Indus Valley School Tiraha	Three way	28.61811	77.355206	Yes	3	1	0	6	1	3	0	1	3	0	3	3	0	3	3	0	0	0	0	1	0		
49	10-21 Tiraha	Three way	28.58722	77.332267	Yes	3	1	0	6	1	3	0	1	3	3	3	3	3	3	3	0	0	0	0	1	0		
50	Sector 57 Chouraha	Four way crossing	28.60047	77.351154	Yes	4	1	0	16	1	2	2	1	4	4	4	4	4	4	4	0	0	4	0	1	0		
51	Haridarshan	Three way	28.60121	77.337648	No	3	1	0	3	1	4	0	1	3	0	3	3	0	3	3	0	0	0	0	1	1		
52	BSNL Chouraha	Four way crossing	28.58324	77.326672	Yes	4	1	0	11	1	4	0	1	4	4	4	4	4	4	4	0	0	1	0	1	0		
53	31-25 Chouraha	Four way crossing	28.5824	77.343727	Yes	4	1	0	13	1	4	0	1	4	4	4	4	4	4	4	0	0	4	0	1	0		

Sr. No.	Junction Name	Junction Type (Rotary / Four way / Three Way / Two Way / Y Shaped)	Latitude	Longitude	Traffic signal installed (Yes/No)	Cameras				Infrastructure					VMS & VA Software / Licences												Others	
						Fixed	PTZ	Speed	ANPR	Poles	ver	Gantry	n Box	LPU)	ATCC	on	Riding	RLVD	driving	g	FRS	Violati	Free left	Seat Belt	Speake	VMD		
54	Gijhor Chouraha	Four way crossing	28.59229	77.357004	Yes	4	1	0	14	1	3	1	1	4	4	4	4	4	4	4	0	0	4	0	1	0		
55	India TV Chouraha (Sec 92)	Four way crossing	28.5173	77.400628	Yes	4	1	0	12	1	4	0	1	4	4	4	4	4	4	4	0	0	3	0	1	0		
56	Pathway School	Three way	28.54253	77.370453	Yes	3	1	0	9	1	2	1	1	3	3	3	3	3	3	3	0	0	1	0	1	0		
57	India TV Tiraha (Sec 85)	Three way	28.5173	77.400628	No	3	1	0	8	1	3	0	1	3	0	3	3	0	3	3	0	0	0	0	1	0		
58	Sector 142 Golchakkar	Four way crossing	28.49705	77.41726	No	6	1	0	10	1	5	0	2	5	0	6	6	0	4	6	0	0	0	0	1	0		
59	Aushadhi Park Chouraha (Bhutani)	Rotatory four way	28.55192	77.319424	No	4	1	0	16	1	0	4	1	4	0	4	4	0	4	4	0	0	0	0	1	0		
60	Model town	Rotatory three way	28.63129	77.374592	No	3	1	0	6	1	3	0	1	3	0	3	3	0	3	3	0	0	0	0	1	0		
61	HTMS (Old) to 44 Golchakra	Roundabout	28.5561	77.326772	No	3	1	0	7	1	3	0	1	3	0	3	3	0	3	3	0	0	0	0	1	0		
62	Botanical Metro	Two way	28.56437	77.335092	No	2	2	0	6	2	3	0	2	2	0	2	2	0	2	2	0	0	0	0	1	1		
63	Okhla bird sanctuary metro	Two way	28.55245	77.322065	No	2	1	0	4	1	2	0	1	2	0	2	2	0	2	2	0	0	0	0	1	0		
64	Sector 137 metro	Open parking area	28.51229	77.403782	No	2	1	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0		

Sr. No.	Junction Name	Junction Type (Rotary / Four way / Three Way / Two Way / Y Shaped)	Latitude	Longitude	Traffic signal installed (Yes/No)	Cameras				Infrastructure					VMS & VA Software / Licences												Others	
						Fixed	PTZ	Speed	ANPR	Poles	ver	Gantry	n Box	LPU)	ATCC	on	Riding	RLVD	driving	g	FRS	Violati	Free left	Seat Belt	Speake	VMD		
65	Shramik Kunj Chouraha	Four way crossing	28.52371	77.379896	Yes	4	1	0	9	1	4	0	1	4	4	4	4	4	4	4	0	0	0	0	1	0		
66	Phool Mandi Chouraha	Four way crossing	28.53119	77.420525	No	4	1	0	10	1	4	0	1	4	0	4	4	0	4	4	0	0	0	0	1	0		
67	Rasoolpur Nawada Chouraha	Four way crossing	28.6209	77.364705	No	4	1	0	10	1	4	0	1	4	0	4	4	0	4	4	0	0	0	0	1	0		
68	Metro Hospital	Four way crossing	28.59737	77.337499	Yes	4	1	0	4	1	4	0	1	4	4	4	4	4	4	4	0	0	0	0	1	0		
69	8,10,11,12 Chowk (Swani Furniture)	Four way crossing	28.5941	77.332977	Yes	4	1	0	12	1	4	0	1	4	4	4	4	4	4	4	0	0	4	0	1	0		
70	Sector 38,39,40	Three way	28.57057	77.358447	No	3	1	0	5	1	3	0	1	3	0	3	3	0	3	3	0	0	0	0	1	0		
71	Water Tank (Sec-21)	Four way crossing	28.58347	77.336047	Yes	4	1	0	11	1	4	0	1	4	4	4	4	4	4	4	0	0	3	0	1	0		
72	Khora Colony Chowk	Three way	28.60895	77.350232	Yes	3	1	0	9	1	2	1	1	3	3	3	3	3	3	3	0	0	2	0	1	0		
73	11-56 Chowk	Four way crossing	28.6017	77.340004	Yes	4	1	0	9	1	4	0	1	4	4	4	4	4	4	4	0	0	1	0	1	0		
74	55-57 Tiraha	Three way	28.60882	77.350211	Yes	3	1	0	9	1	2	1	1	3	3	3	3	3	3	3	0	0	2	0	1	0		
75	57-58 Chowk	Three way	28.60966	77.353304	Yes	3	1	0	6	1	3		1										0	1				

Sr. No.	Junction Name	Junction Type (Rotary / Four way / Three Way / Two Way / Y Shaped)	Latitude	Longitude	Traffic signal installed (Yes/No)	Cameras				Infrastructure					VMS & VA Software / Licences												Others	
						Fixed	PTZ	Speed	ANPR	Poles	ver	Gantry	n Box	LPU)	ATCC	on	Riding	RLVD	driving	g	FRS	Violati	Free left	Seat Belt	Speake	VMD		
76	Saphire School	Four way crossing	28.59635	77.379322	Yes	4	1	0	8	1	4	0	1	4	4	4	4	4	4	4	0	0	0	0	1	0		
77	Sector 137 Tiraha	Three way	28.51229	77.408782	No	3	0	0	8	0	3	0	1	3	0	3	3	0	3	3	0	0	0	0	1	0		
78	Jagran chowk	Three way	28.62732	77.381762	No	3	1	0	6	1	4	0	2	3	0	3	3	0	3	3	0	0	0	0	1	1		
79	Yamuna Bridge (Old)	Two way	28.55192	77.319424	No	2	0	4	8	0	1	2	2	3	0	2	2	0	2	2	0	4	0	0	1	1		
80	Sector 93 Chouraha	Four way crossing	28.5174	77.388546	No	4	1	0	12	1	4	0	1	4	0	4	4	0	4	4	0	0	0	0	1	0		
81	Noida Office	Three way	28.59082	77.31902	Yes	3	1	0	6	1	4	0	2	4	3	3	3	3	3	3	0	0	0	0	1	1		
82	DND	Two way	28.57907	77.301094	No	2	0	4	8	0	1	2	2	3	0	4	4	0	4	4	0	4	0	0	0	1		
83	Kalindi bridge	Two way	NA	NA	No	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2		
84	Elevated road	NA	NA	NA	No	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2		

Summary of Total Quantities		
Cameras	Fixed	278

	PTZ	76
	Speed	18
	ANPR	693
Infrastructure	Poles	76
	Arms / cantilever	272
	Gantry	20
	Junction Box	102
	Small Junction Box (for ANPR LPU)	273
VMS & VA Software / Licences	ATCC	150
	No helmet Detection	272
	Triple Riding	272
	RLVD	150
	Wrong side driving	269
	No parking	266
	FRS	2
	Speed Violation	18
	Free left (Cameras for free left detection shall be considered in the BOQ in appropriate line item as per the required quantities mentioned in Annexure 8 "Summary of total quantity". Technical and functional specification of ANPR shall be considered for these cameras).	65
	Seat Belt (This is currently not required. However, if this feature is required in near future the solution provided by the bidder shall support the same and accordingly distribution is provided in the above table).	0
Others	PA Speaker	82
	VMD	22

**CONTRACTOR SIGNATURE
WITH SEAL**

OFFICER INVITING TENDER



noida

NEW OKHLA INDUSTRIAL DEVELOPMENT AUTHORITY

Job No. 41/GM-R/S. M.(E&M)-III/2019-20

Request for Proposal

**Selection of Implementation Agency (IA) for implementation of
Integrated Security and Traffic Management System (ISTMS) for
NOIDA City**

RFP Volume II B—Functional and Technical Requirement Specifications

Dated:02/11/2020

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1 Common guidelines regarding compliance of systems / equipment / devices

- The specifications mentioned for various IT / Non-IT components are minimum requirements and should be treated for benchmarking purpose only.
- IA is required to undertake its own requirement analysis and may propose higher specifications that are better suited to the requirements.
- None of the IT / Non-IT equipment's proposed by the IA should be End of Life product. It is essential that the technical proposal is accompanied by the OEM certificate in the format given in this Tender, where-in the OEM end of life product & shall support for at least 5 years from the date of Bid Submission.
- All IT Components should support IPv4 and IPv6
- IA should submit all back-to-back service agreements should be submitted along with the Technical Bid.
- All equipment, parts should be original and new.
- The proposed systems and IT Infrastructure components like servers, storage, network and Security solutions etc. should be of enterprise class and must be current as per OEMs latest offering, in line with advancements of technology in these domains. All the components should be able to handle expected loads and provision the desired transaction times and throughputs accordingly.
- The user interface of the system should be a user-friendly Graphical User Interface (GUI).
- Critical core components of the system should not have any requirements to have proprietary platforms and should conform to open standards.
- For custom made modules, industry standards and norms should be adhered to for coding during application development to make debugging and maintenance easier. Object oriented programming methodology must be followed to facilitate sharing, componentizing and multiple-use of standard code. Before hosting the application, it shall be subjected to application security audit to ensure that the application is free from any vulnerability; and approved by the Traffic Police Department.
- The Successful IA should also propose the specifications of any additional hardware, if required for the system.
- The proposed solution of MSP should meet the Application Visibility and Reporting requirement which provides detailed charts and graphs to give more insight into the performance of web applications like TCP traffic, DNS traffic, as well as system performance (CPU, memory, etc.). Application visibility should provide below metrics and entity of each application:
- The proposed solution of MSP should improve the performance of application and speed up the application response and increase the server capacity with below optimization tools:
 - Intelligent browser referencing— Reduces the number of requests and speeds load times by managing object expiration dates and storing static objects in the browser cache
 - Image optimization—Reduces image file size to speed mobile access
 - Symmetric adaptive compression— Dynamically selects the appropriate compression codec to reduce the volume of data traversing the WAN
 - SPDY and HTTP2.0 gateway—Takes advantage of new SPDY protocol without costly server upgrades
- Security solution must be able to decrypt SSL web traffic through ECC and RSA protocol both. The solution must support TLSv1.0, TLSv1.1 and TLSv1.2 and TLSv1.3.
- All the hardware and software supplied should be from the reputed Original Equipment Manufacturers. (OEMs). The Department reserves the right to ask replacement of any hardware / software if it is not conforming to all the requirements specified in the tender document during the bid evaluation stage.
- The Bidder shall quote only one specific make and model from only one specific OEM only, for each of the goods. Providing more than one option shall not be allowed. All goods quoted by the Bidder

must be associated with item code and names and with printed literature describing configuration and functionality.

Labelled or third-party products not manufactured by the OEM are discouraged.

2 Functional Requirement Specifications

2.1 ATCS Software Application

Objective of the ATCS would be to minimize the stops and delays in a road network to decrease the travel time with the help of state-of-the-art technology. The adaptive traffic control system shall operate in real time with the capacity to calculate the optimal cycle times, effective green time ratios, and change intervals for all system traffic signal controllers connected to it. These calculations shall be based up on assessments carried out by the ATCS application software running on a Central Computer based on the data and information gathered by vehicle detectors at strategic locations at the intersections controlled by the system.

The ATCS application software shall do the following:

S. No.	Description	Compliance (Y / N)	Documentation Reference
	Make		
	Model		
1.	Identify the critical junction of a corridor or a region based on maximum traffic demand and saturation. For this purpose, it should utilize the data of vehicle detector required for ATCS operation. Detectors see all traffic in a deep and wide field of view to capture required data for ATCS functionality.		
2.	The system shall have a distributed architecture of sub-systems and structured so that signalized junctions can be appropriately grouped into sub-areas or sub-systems (minimum 2 and up to 40). Sub-areas are to be controlled by a regional computer.		
3.	Up to 80 users should be able to connect to the central ATCS system and up to 20 users to regional computer controlling sub-systems with varying levels of security and access at the same time the proposed ATCS system shall be scalable to include any additional junctions in the future.		
4.	The critical junction cycle time shall be used as the group cycle time i.e. cycle time common to all intersection in that corridor or region.		
5.	Stage optimization to the best level of service shall be carried out based on the traffic demand.		
6.	Each junction operated as part of the System shall exist in one of three states, namely off-line (OF), on-line Local (LO) or computer control (CC). Example of LO is cable-less linking and OF is semi-actuation or full-		

S. No.	Description	Compliance (Y / N)	Documentation Reference
	actuation.		
7.	When a junction is in the LO state, it shall be monitored and tested for correct operation and may be picked up by command for computer control (i.e., to the CC state). Monitoring activities shall be performed in a manner consistent with controller type and operating software requirements. The LO state can result from a local activity (e.g., pre-empt), operator directed activity, scheduled activity or system detected failure condition.		
8.	Cycle optimization shall be carried out by increasing or decreasing the common corridor cycle time based on the traffic demand within the constraints of Minimum and Maximum designed value of cycle time. It shall use vehicle presence data provided by vehicle detector and Degree of Saturation for Cycle Length optimization.		
9.	Offset correction shall be carried out to minimize number of stops and delays along the corridor for the priority route. Offset deviation measured using distance and speed between successive intersections shall be corrected within 5 cycles at a tolerance of +/- 5 seconds maximum.		
10.	The system shall have provision to configure priority for upstream signals as default. The ATCS software shall continuously check the traffic demand for upstream and downstream traffic and automatically assign the priority route to the higher demand direction.		
11.	Develop appropriate stage timing plans for each approach of every intersection under the ATCS, based on real time demand		
12.	In order to achieve coordination, subsystems operating on the same cycle time should have the provision to be linked so that a defined offset exists between the subsystems. This offset shall be defined as the number of seconds between the zero point of one subsystem and the end of a stage of a specified junction in the other subsystem. Linked subsystems must share the same subsystem cycle time but any or all the junctions in any subsystem may be		

S. No.	Description	Compliance (Y / N)	Documentation Reference
	specified to “double cycle”.		
13.	When a link is established between two subsystems, the cycle generator of the subsystem linking is speeded up or slowed down (i.e. the cycle time of the subsystem is increased or decreased) until the specified relationship between the two subsystems is achieved. If a junction in a subsystem is required to change its grouping frequently depending on traffic conditions, it should be dynamically linked or delinked with other sub-systems.		
14.	Propose timing plans to every intersection under the ATCS in every Cycle		
15.	Shall include algorithm(s) which shall adjust the signal timing parameters.		
16.	Verify the effectiveness of the proposed timing plans in every cycle		
17.	Identify Priority routes		
18.	Synchronize traffic in the Priority routes		
19.	Manage and maintain communication with traffic signal controllers under ATCS		
20.	Shall be able to control & manage the traffic merging from highways to the city and vice-versa using dedicated techniques.		
21.	Maintain database for time plan execution and system performance and data should be made available to city planners for planning city traffic.		
22.	Maintain error logs and system logs		
23.	Generate Reports on request		
24.	Graphically present signal plan execution and traffic flow at the intersection on desktop		
25.	Graphically present time-space diagram for selected corridors on desktop		
26.	Graphically present network status on desktop		
27.	Make available the network status and report viewing on Web/local GUI as per RFP		
28.	The ATCS shall generate standard and custom reports for planning and analysis		
29.	It shall be possible to interface the ATCS with a popular microscopic traffic flow simulation software for pre and post implementation analysis and study of the proposed ATCS control strategy		
30.	Shall provide assessing strategies to minimize		

S. No.	Description	Compliance (Y / N)	Documentation Reference
	congestion, delays and emergency response time to events via simulation and planning tools linked with real time traffic data fusion and control of traffic signalling infrastructure on ground.		
31.	Shall collect continuously information about current observed traffic conditions from a variety of data sources and of different kind (traffic states, signal states, vehicle presence) using vehicle detectors.		
32.	Shall infer a coherent and comprehensive observed traffic state (speeds, vehicular densities, and presence of queues) on all network elements, from abovementioned observations, including vehicle trajectories, through a number of map matching, data validation, harmonization and fusion processes		
33.	Shall extend the measurements made on only number of elements both on the rest of the unmonitored network, and over time, thus obtaining an estimation of the traffic state of the complete network and the evolution of this traffic state in the future		
34.	Shall identify the traffic state with respect to current incidents in Realtime and traffic management strategies (e.g. traffic signal control or variable message displays), improving the decision- making capabilities of the operators even before problems occur.		
35.	Shall calculate customizable Indicators to quickly assess the results		
36.	Shall generate alerts to the operator that trigger on customizable conditions in the network (starting with simple drops in flow, up to total queue lengths along emission sensitive roads surpassing a definable threshold)		
37.	Shall distribute both collected and calculated traffic information via a variety of communication protocols and channels, ensuring high interoperability degree and thus acting as a “traffic data and information hub”		
38.	Shall provide calculated traffic flows estimation and identify, queues and delays to Urban Control and Adaptive Signal Control Systems, allowing for proactive Traffic Management and Control		
39.	Shall create a traffic data warehouse for all historic traffic information gathered from the		

S. No.	Description	Compliance (Y / N)	Documentation Reference
	hardware installed on the road network.		
40.	Shall operate in real time that is continuously updating the estimates on the state of the network and the travel times on the basis of data collected continuously over time.		
41.	Shall operate the traffic lights with the adaptive traffic controls, based on the current traffic demand and the current incidents, thus optimizing the green waves continuously throughout the network		
42.	Enable a smart public transport priority respecting the delays for all road users at once with the adaptive signal controller. Emergency Vehicle Priority Emergency Vehicle Priority Provision to make way for emergency vehicles like fire, police and ambulances during emergencies.		
Reports			
43.	System shall generate Corridor based and Intersection based reports. The application software shall generate the following reports, but not limited to the below. All the reports shall be possible for selected dates.		
44.	Intersection based reports		
45.	Stage Timing report – The report shall give details of time at which every stage change has taken place. The report shall show the stage sequence, stage timings and stage saturation of all stages of all cycles for a day. The saturation is defined as the ratio between the available stage timings to the actual stage timing executed by the traffic signal controller for the stage (stage preemption time).		
46.	Cycle Timing report – The report shall give details of time at which every cycle has taken place. The report shall show the cycle sequence and cycle timings for all the cycles in a day. Stage switching report – The report shall give details of time at which a stage switching has taken place. The report shall show the stage sequence, stage timings and stage saturation for a day.		
47.	Cycle Time switching report – The report shall give details of time at which a cycle switching has taken place. The report shall show the cycle sequence and cycle timings for the cycle in a day.		

S. No.	Description	Compliance (Y / N)	Documentation Reference
48.	Mode switching report – The report shall give details of the mode switching taken place on a day.		
49.	Event Report - The report shall show events generated by the controller with date and time of event.		
50.	Power on & down: The report shall show time when the master is switched on, and last working time of the master controller.		
51.	Intensity Change – The report shall show the brightness of the signal lamp is changed according to the light intensity either manually through keypad or automatically by LDR with time stamp.		
52.	Plan Change – The report shall show the time of change of plan either through keypad or remotely through a PC or Server.		
53.	RTC Failure – The report shall show the time when RTC battery level goes below the threshold value.		
54.	Time Update – The report shall show the time when the Master controller updated its time either manually through keypad, automatically by GPS or through remote server.		
55.	Mode Change – The report shall show the time when Master controller's operating mode is changed either manually through keypad or a remote server. The typical modes are FIXED, FULL VA SPLIT, FULL VA CYCLE, FLASH, LAMP OFF and HURRY CALL.		
56.	Lamp Status Report – The report shall show lamp failure report with date and time of failure, color of the lamp and associated phase		
57.	Loop Failure Report – The report shall show the date and time of detector failure with detector number and associated phase.		
58.	Conflict – The report shall show the conflict between lamps (RED, AMBER, GREEN) in the same phase or conflict between lamps with other phase.		
59.	Corridor Performance Report – The report shall show the saturation of all the intersections in a corridor for every cycle executed for the corridor and the average corridor saturation for a day		
60.	Corridor Cycle Time Report – The report shall show the Corridor cycle time, Intersection cycle time, Mode of operation and degree of		

S. No.	Description	Compliance (Y / N)	Documentation Reference
	saturation of all the intersections in a corridor for every cycle for a day		
Graphical User Interface			
61.	The application software shall have the Graphical User Interface (GUI) for user friendliness. The Command & Control Application shall have a Graphical User Interface (GUI) with an underlying GIS map that shall display the network and the traffic signals, traffic cameras/detectors, Variable Message Display (VMD) boards and Public Address (PA) systems deployed, in one view		
62.	User login – Operator authentication shall be verified at this screen with login name and password		
63.	Network Status Display – This online display shall indicate with appropriate color coding on site map whether an intersection under the ATCS is online or off. On double clicking the intersection a link shall be activated for the traffic flow display for the intersection.		
64.	Traffic Flow Display – This online display shall indicate the current traffic flow with animated arrows, mode of operation, stage number being executed and elapsed stage time. It shall also display traffic counts from each of the approach of all the junctions.		
65.	Saturation Snapshot – This display shall show the current saturation levels of all intersections in a corridor.		
66.	Reports Printing / Viewing – This link shall allow selection, viewing and printing of different reports available under ATCS		
67.	Time-Space Diagram – The time-space diagram shall display the current stages being executed at every intersection in a corridor with immediate previous history.		
68.	Junctions shall be plotted proportional to their distance on X/Y-axis and time elapsed for the stage in seconds on X/Y-axis.		
69.	Junction names shall be identified with each plot.		
70.	Currently running stage and completed stages shall be identified with different colors.		
71.	Stages identified for synchronization shall be shown in a different color.		
72.	Speed lines shall be plotted for stages identified		

S. No.	Description	Compliance (Y / N)	Documentation Reference
	for synchronization to the nearest intersection in both directions.		
73.	It should be possible to freeze and resume online plotting of Time-Space diagram.		
74.	The system shall have other graphical interfaces for configuring the ATCS, as appropriate.		

2.2 Selective Vehicle Priority & Compensation Module

In-line with the vision of making the city smarter, the authority is very keen to make the junction smart enough to provide the **selective vehicle priorities to the emergency & VIP vehicles and public transport buses**. The system shall provide following functionalities:

S. No.	Description	Compliance (Y / N)	Documentation Reference
	Make		
	Model		
1.	The ATCS system shall interface with the and provide buses / Ambulance / VIP / Fire brigade vehicles the priority in crossing the junction.		
2.	The ATCS system should be capable of route pre-emption capability without any additional pre-emption hardware. It shall be capable of being applied to a single junction or to a series of junctions to allow green wave Pre-emption, or special arterial traffic control strategies that might be required. Route Pre-emption shall be capable of being requested from any system workstation by authorized operators		
3.	The ATCS system shall be capable of simultaneous two or more pre-emption plans for each emergency. In the event that two or more conflicting route Pre-emption requests are received (i.e., the routes contain the same junction), the first request shall be honored and all subsequent requests for conflicting routes shall be disallowed, with appropriate notification made to the request initiator.		
4.	The ATCS Application shall provide for full access and editing capabilities of the Route Pre-emption plans from any workstation (provided that the user has an appropriate security access level). It shall be possible that, if necessary, the downloaded Route Pre-emption plan may be terminated any time before activation or during the operation of any Pre-emption plan via the System from any of the workstations with appropriate user security access level.		
5.	For emergency management, ATCS should be able to accept commands from workstations deployed in select areas of route-preemption or emergency route management.		
6.	It shall also be possible to integrate the RFID reader in the ATCS system in near future for identifying the buses & other vehicles of significance near the junction to providing		

S. No.	Description	Compliance (Y / N)	Documentation Reference
	priorities.		
7.	The system shall be able to determine the priority order of each vehicle when there are multiple priority vehicles simultaneously present at a given junction, and accordingly determine which get the priority first.		
8.	The priority can be given either as an extension to green stage or a forced switching to a green stage depending on the current state of the signal.		
9.	The system shall also compensate the other stages for the lost green after the passage of the priority vehicle in order to minimize congestion.		
10	The system should be future ready to provide additional mobile application shall be provided for emergency/VIP vehicles without GPS devices with following features: <ul style="list-style-type: none">i. Role-based selective user loginii. Emergency mode on/offiii. Auto timeout feature of the emergency modeiv. GPS based location information to the ATCS system		

2.3 Traffic Signal Controller

S. No.	Description	Compliance (Y / N)	Documentation Reference
	Make		
	Model		
1.	Appropriate controller technology shall be chosen to provide the operational levels and accuracy as required for successful function of the ITMS system as per the SLAs defined.		
2.	The Traffic Signal Controller will be controlled centrally on real time (adaptive) as an individual junction or as part of group of traffic junctions along a corridor or a region. The Signal Controller will be designed flexible to accept the required commands for its adaptive operation easily from Traffic command control Center.		
3.	Traffic Signal Controller must be chosen to provide the accuracy as required for successful function of the ITMS system as per the SLAs defined,		
4.	Appropriate controller technology shall be chosen to provide the operational levels and accuracy as required for successful function of the ITMS system as per the SLAs defined.		
5.	The Traffic Signal Controller shall be capable of communicating with the ITMS server located at Data Center through ethernet on a secured managed communication network.		
Separate panel shall be provisioned with Traffic Signal Controller to operate switches by Traffic Police / monitoring personnel with lock and key arrangements at Junction. This should provide below features:			
6.	<ul style="list-style-type: none"> i. Junction Off Switch shall put on and off signal lamp without violating any safety clearances. ii. Auto / Manual switch shall enable / disable manual operation of the controller without interruption. iii. Activating the pushbutton switch shall terminate the currently running stage (signal plan timetable) and start the next without violating safety clearance. iv. Emergency switch shall force the controller to define any stages as per requirement like passages to emergency vehicles, without violating safety clearances. 		

S. No.	Description	Compliance (Y / N)	Documentation Reference
	v. Flash switch shall force the signal to flash Amber /Red.		
The Traffic Signal Controller shall have the following mode of operation:			
7.	Fixed Time: The cycle time remains constant in every cycle execution for a given time period in this stage. The stage timings shall be executed according to the Junction specific Time table stored / maintained in the traffic signal controller FLASH memory ignoring input from vehicle detectors.		
8.	Vehicle Actuation with all stages preemption: In this mode, the traffic signal controller shall execute stage timing as per demand from vehicle detectors within the constraints of minimum Green, Maximum Green running period for the stage and cycle time stored in the traffic signal controller FLASH memory. Preemption shall be possible for the demand actuated stages Cycle time may vary in every cycle execution.		
9.	Semi Actuation: In this mode, the traffic signal controller shall execute stage timings in the vehicle actuated stages as per demand from vehicle detectors within the constraints of minimum Green, Maximum Green running period for the stage and cycle time stored in the traffic signal controller FLASH memory. All other stages shall execute the Maximum Green time configured for the stage. Preemption shall be possible for all demand actuated stages. Cycle time may vary in every cycle execution.		
10.	Stage Skipping: In this stage, the traffic signal controller shall not execute the stage enabled for skipping when there is no vehicle demand registered for the stage till clearance amber time of the previous stage.		
Vehicle Actuation with Fixed Cycle Length:			
11.	In this stage, the traffic signal controller shall execute stage timing as per demand from video based vehicle detector within the constraints of Minimum Green, Maximum Green running period for the stage and Cycle time shall be maintained constant during a given time slot.		

S. No.	Description	Compliance (Y / N)	Documentation Reference
12.	Pre-emption for all demand actuated stages except for priority stage shall be possible.		
13.	The system shall have true real-time adaptivity. Adapts to traffic present at this very instant (not only statistically)		
Total TSS mode:			
14.	In This mode, the traffic signal controller shall execute stage timings as per demand within the constraints of Minimum Green, Maximum Green running period for the stage and Cycle time specified by the central computer during every cycle switching.		
15.	Preemption for all demand actuated stages except priority stage shall be possible in this mode. The traffic signal controller shall identify a communication failure with the central computer within a specified time period. In such an event the signal plan timing shall be executed from the local timetable stored in the traffic signal controller FLASH memory.		
Operating Parameters of Traffic Signal Controller			
16.	It shall be possible to operate the filter green (turning right signal) along with a vehicular phase. The filter green signal shall flash for a time period equal to the clearance amber period at time when operated with a vehicular phase. It shall be possible to configure any phase to the given lamp numbers at the site.		
17.	Stages- The controller shall have facility to configure minimum 16 stages using major and macro stages.		
18.	Cycle Plans - The controller shall have facility to configure 10 cycle plans and the Amber flashing / red flashing plan. It shall be possible to define different stage switching sequences in different cycle plans. The controller shall have the capability for a minimum of 20 cycle-switching per day in fixed mode of operation.		
19.	Day Plan – The controller shall have facility to configure each day of the week with different day plan. It shall also be possible to set any of the day plans to any day of the week. The controller shall have the capability to configure 20 days plans.		

S. No.	Description	Compliance (Y / N)	Documentation Reference
20.	Special Day Plans- The controller shall have facility to configure a minimum of 20 days as special days in a calendar year.		
21.	Starting Amber - During power up the controller shall initially execute the Flashing Amber / Flashing Red plan for a time period 3 seconds to 10 seconds. The default value of this starting Amber is 5 seconds. Facility shall be available to configure the time period of starting Amber within the given limits at the site.		
22.	Inter green – Normally the Inter-green period formed by the clearance Amber and Red extension period will be common for all stages. However, the controller shall have a facility to program individual inter green period from 3 seconds to 10 seconds.		
23.	Minimum Green – The controller shall allow programming the minimum Green period from 5 seconds to 10 seconds without violating the safety clearances. It should not be possible to preempt the minimum Green once the stage start commencing execution.		
24.	All Red – Immediately after the starting Amber all the approaches should be given red signal for a few seconds before allowing any right of way as a safe measure. The controller shall have program ability of 3 seconds to 10 seconds for all Red signal.		
25.	Signal lamps monitoring – The controller shall have inbuilt circuitry to monitor the lamp status.		
26.	Green – Green conflict monitoring – The controller shall have a facility to list all conflicting phases at an intersection. The controller should not allow programming of these conflicting phases in a stage. A hardware failure leading to a conflict condition (due to faulty devices or short circuit in the output) shall force the signal into flashing Amber / Flashing Red.		

2.4 Traffic Sensor

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Make		
	Model		
1.	Traffic sensors shall be provided for successful functioning of the ITMS system to meet the		

	defined SLAs		
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2.5 Automatic Traffic Counting and Classification System (ATCC) – Video/Thermal

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Make		
	Model		
1	The ATCC System shall primarily be installed at important junctions and mid-blocks in the city. The ATCC System shall help in continuous monitoring of the traffic conditions in the city. The following are the functional Requirements related to the ATCC System.		
2	The ATCC system shall be deployed on city road primarily on city's entry, exit and at major points of intersection in NOIDA, the objective of the sub-system is to collect traffic data at major points.		
3	The data from ATCC shall be used by various Government and private organizations to understand the existing traffic volume trends & patterns		
4	The ATCC data collected shall be used by various stake-holders for extensive planning and traffic engineering exercises across the road stretches		
5	The real-time traffic data can be shared with 3rd party map solution providers and online navigation systems as per the discretion of authority.		
6	The software and solution of ATCC shall comply with all functional and business requirement as specified in this RFP, elsewhere.		
7	The ATCC System shall use video based non-intrusive technology for counting and classifying the vehicles in a real-time under live traffic conditions.		
8	The field of view of ATCC on a road stretch shall be able to cover from end to end of the traffic lane irrespective of the number of lanes on the particular road stretch.		
9	The number of ATCC sensors required to achieve a multi-lane road stretch shall be arrived at by the SI based on the technology being provided and other criteria.		
10	The ATCC System at any point of time, shall provide a minimum of 3 classification levels viz.		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	2-wheeler, 3-Wheeler/Auto Rickshaws, Bus/Truck/MAV at any given point in time.		
11	<p>The ATCC system shall meet the following accuracy levels when compared with actual data collected using other means at each location of all the installed locations (minimum accuracy requirements) in day and night & in FOG & poor visibility situations.</p> <ul style="list-style-type: none"> Counting of vehicles: > 90% Classification of vehicles (w.r.t. each class): > 80% 		
12	The ATCC shall have built in algorithms to distinguish and classify non-linear traffic patterns and occlusion of traffic.		
13	There shall be an operator at central control room to operate the ATCC application on ATCC workstation.		
14	The data of ATCC shall also be available in open data source which can further be used in other applications.		
15	The overall system shall work in an integrated fashion whereby data from the ATCC shall be continuously recorded, processed and transferred to TCCC.		
16	The algorithm (software) shall be capable of adding configuration parameters for each of the vehicle classes based on the RTA standards and field conditions to achieve maximum accuracy		
17	Sensor should enable client to identify and classify vehicles visually for comparative analysis purposes in all type of light conditions dawn, dusk, day, night & bad weather situations like Fog bad weather etc.		
18	ATCC shall be able to process simultaneously at least 100 vehicles and parallel passages of the vehicles at that location at a given point of time and provide queue length estimation for minimum 85 meters		
19	Even though multiple sensors are required based on the number of actual lanes, the ATCC should provide processed data at each location lane wise and leg wise.		
20	The ATCC shall count and classify vehicles traveling in any or both the directions at a given location as per the requirement based on the field conditions.		

S. No.	Description	Compliance (Y/N)	Documentation Reference
21	The ATCC should be able to count and classify the vehicles with minimum accuracy requirements for vehicles traveling between 20 kmph to 120 kmph speeds.		
22	The ATCC sub-system should be capable of capturing at a minimum the following primary data points for each vehicle at any point of time:		
a	• Unique ID		
b	• Vehicle Count		
c	• Leg/ road Location		
d	• Classification in day, night and FOG conditions		
f	• Density		
g	• Headway		
h	• Occupancy		
i	• Queue Length for minimum 50 meters (including night and FOG conditions)		
j	• Speed		
23	The ATCC sub-system shall be capable of computing unlimited Derived fields/ data sets based on several mathematical computations on the primary data points collected. In general, all computations required for deriving several Traffic Engineering measures shall be supported by the ATCC reporting module.		
24	The ATCC sub-system provider shall work closely with client for modifying/configuring standard existing reports and data formats to suit client requirements. The vendor shall support client in developing any/ all reports and formats required by the agency for a period of at least 18 months from the system go-live date.		
25	The ATCC Sub-system shall be capable of sharing the data with any other sub-system in a real-time as per the requirement.		
26	The ATCC system shall have an operations monitoring dashboard, located at the TCCC & monitored by the operator.		
27	On this dashboard there shall be a schematic layout of the ATCC showing all the connected nodes on the GUI.		

2.6 Camera/Thermal/ Vehicle Speed Detector

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Make		
	Model		
1	The vehicle detector equipment shall be interfaced with Traffic Signal Controller. The output of the same i.e. presence of vehicles shall be used to influence the operation of the traffic signal controller, generate counts, demands and extensions for right-of-way.		
2	IA shall be responsible for the position of the detector (upstream, downstream, stop-line, exit etc.) for independent straight and right turn signals. It shall be capable to count vehicles with 90% accuracy for non-lane based mixed traffic flow conditions and do vehicle classification of at least three different classes (two-wheeler, LMV, HMV)." In all light & weather conditions including FOG & complete dark		
3	Vehicle detector that does not change its status at least once during a stage execution shall be notified to the Central server (in ITMS mode) at the termination of the associated stage.		
4	Vehicle Detector camera should look at approaching traffic and should work in FOG and dirt on sensor should not impact performance		
5	Vehicle Detector camera can optionally to be used in traffic data analysis		

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2.7 ANPR System

The ANPR System shall enable monitoring of vehicle flow at strategic locations. The system shall support real-time detection of vehicles at the deployed locations, recording each vehicle, reading its number plate, database lookup from central server and triggering of alarms/alerts based on the vehicle status and category as specified by the database. The system usage shall be privilege driven using password authentication. The software needed for ANPR must have capability to be hosted on cloud / Hybrid / On premises environment.

Sr. No.	Parameters	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
	Make			
	Model			
1	Vehicle Detection by Color and logo / Color and number plate	<ul style="list-style-type: none"> The system shall detect the color of all vehicles in the camera view during daytime and label them as per the predefined list of configured system colors. The system shall store the color information of each vehicle along with the license plate information for each transaction in the database. The system shall have options to search historical records for post event analysis by the vehicle color or the vehicle color with license plate and date time combinations The system shall detect make of vehicle by logo detection. The system shall classify the vehicles in minimum 3 categories (2-3 Wheelers, LMVs and HMTVs) (these are non-working analytics and will not work in night, dawn and dusk) 		
2	Alert Generation	<ul style="list-style-type: none"> The system should have option to input certain license plates according to the hot listed categories like "Wanted", "Suspicious", "Stolen", etc by authorized personnel. The system should be able to generate automatic alarms to alert the control room personnel for further action, in the event of detection of any vehicle falling in the hot listed categories 		
3	ONVIF Compliance	<ul style="list-style-type: none"> The camera should be ONVIF Profile S & G Conformant for both present & future generation cameras of OEM 		
4	Vehicle Status Alarm Module	<ul style="list-style-type: none"> On successful recognition of the number plate, system should be able generate automatic alarm to alert the control room for vehicles which have been marked as "Wanted", "Suspicious", "Stolen", "Expired". (System should have provision/expansion option to add more categories for future need). The Instantaneous and automatic 		

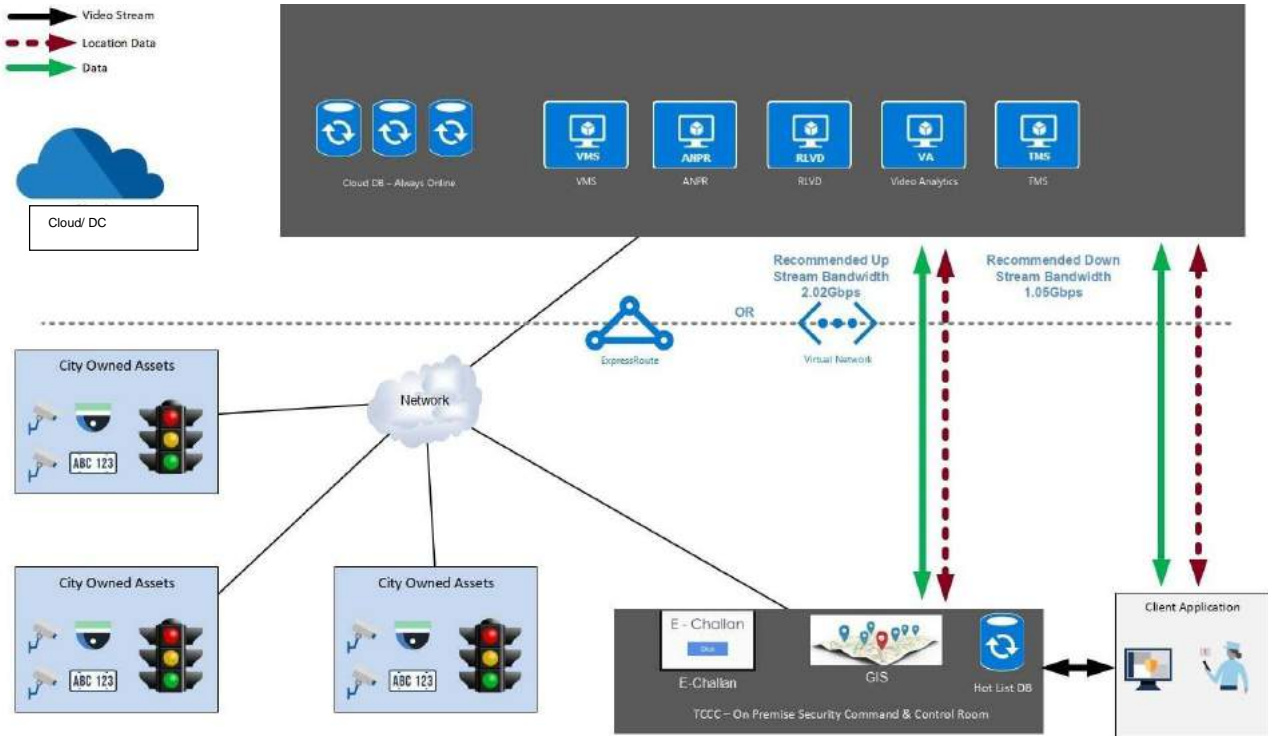
Sr. No.	Parameters	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
		generation of alarms. In case of identity of vehicle in any category which is define by user		
5	Vehicle Log Module	<ul style="list-style-type: none"> The system shall enable easy and quick retrieval of snapshots, video and other data for post incident analysis and investigations. The system should be able to generate suitable MIS reports that will provide meaningful data to concerned authorities and facilitate optimum utilization of resources. These reports shall include. Report of vehicle flow at each of the installed locations for Last Day, Last Week and Last Month. Report of vehicles in the detected categories at each of the installed locations for Last Day, Last Week and Last Month. Report of Vehicle Status change in different Vehicle Categories. The system shall have Search option to tune the reports based on license plate number, date and time, site location as per the need of the authorities. The system shall have option to save custom reports for subsequent use. The system shall have option to export report being viewed to common format for use outside of the ANPRS or exporting into other systems. The system should provide advanced and smart searching facility of License plates from the database. There should be an option of searching number plates almost matching with the specific number entered (up to 1 and 2-character distance) 		
6	Vehicle Category Editor	<ul style="list-style-type: none"> The system should have option to input certain license plates according to category like "Wanted", "Suspicious", "Stolen", "Expired" etc. by Authorized personnel. 		

Sr. No.	Parameters	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
		<ul style="list-style-type: none"> The system should have an option to add new category by authorized personnel. The system should have option to update vehicle status in specific category by authorized personnel. e.g. on retrieval of stolen vehicle, system entry should be changed from "Stolen" to "Retrieved". System should have option to specify maximum time to retain vehicle records in specific categories. 		
7	General Specification	The system should be capable of generating video and minimum 5 or more snapshots in any of the standard industry formats (.MJPEG, .JPG, AVI, .mp4, .mov etc.) with at least 10 frames per second.		
8		The system should be able to perform ANPR on all the vehicles passing the site and send alert on detection of any hot listed vehicle. The system should have ANPR/ OCR to address the alpha numeric character of irregular font sizes		
9	Central Management Module	The Central Management Module shall run on the ANPR Central Server in control booth. It should be possible to view records and edit hotlists from the Central Server		
10	Traffic Analytics	<p>Bidders to propose the following Traffic analytics, either edge based or Cloud based or LPU based</p> <p>a. The system shall detect the color of all vehicles in the camera view during daytime and label them as per the predefined list of configured system colors. The system shall store the color information of each vehicle along with the license plate information for each transaction in the database.</p> <p>b. The system shall have options to search historical records for post event analysis by the vehicle color or the vehicle color with license plate and date time combinations</p> <p>c. The system shall classify the vehicles in minimum 3 categories (2-3 Wheelers, LMVs and HMTVs) (these are non-working analytics and will not work in night, dawn and dusk)</p> <p>d. Vehicle counts, Average speed and Road occupancy, Wrong way detection, Stopped vehicle and free lane detection</p> <p>e. This clause stands deleted</p> <p>f. Traffic congestion data through ANPR and 3rd party sources on GIS maps and travel time analytics</p> <p>g. No helmet and triple riding detection shall</p>		

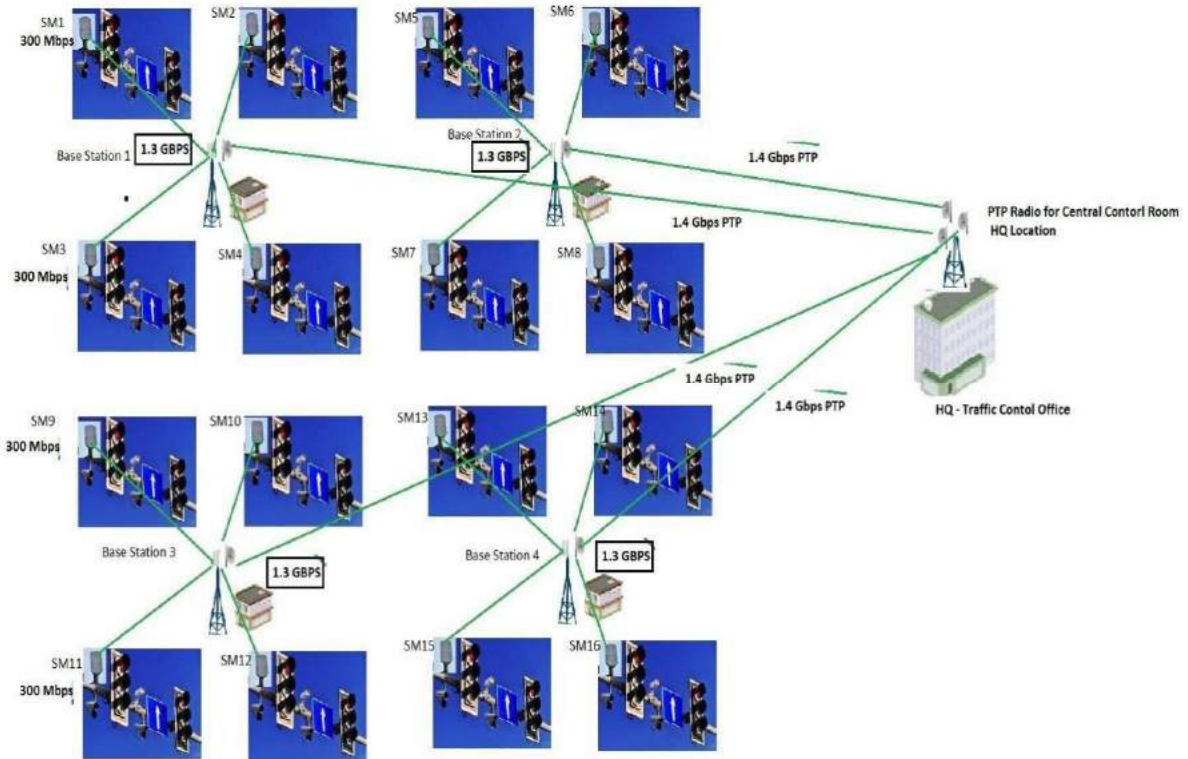
Sr. No.	Parameters	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
		be evaluated as part of the solution based on accuracy levels (85% or above) at the time of PoC. The bidder needs to design the solution accordingly. Note: Parking management, no parking zones and pedestrian detection is not required under the project.		

2.8 System Architecture (Overall Solution) – Suggestive

The below architecture is suggestive. However, bidder is encouraged to provide their architecture considering improvements, optimization and overall solution design. The following system architecture is proposed for this project. The option for providing cloud/ on-premise solution is with the bidder.



2.9 System Architecture (Wireless RF) – Suggestive



2.10 Risk Analysis

The solution should be capable of collecting all propablerisk .

2.11 Network Connectivity for Field Equipment

S. No.	Description	Compliance (Y/N)	Documentation Reference
1	The ITMS System Integrator shall provide a detailed network architecture of the overall ITMS solution, incorporating findings of detailed site survey. The network so envisaged should be able to provide real time data streams to the TCCC. All the components of the technical network architecture should be of industry best standard and assist in ensuring that all the connectivity SLAs are adhered to during the O&Mphase.		
2	A combination of network technology including leased lines, OFC Network,		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Wireless broadband and Mobile Network technologies etc. may be used to provide seamless connectivity to all field devices as well as locations with TCCC.		
3	ITMS System Integrator shall be allowed to procure bandwidth related services from multiple Telecom Service Provider. The ITMS System Integrator is required to provide connectivity for all the components of ITMS.		

2.12 Traffic Violation Detection Systems

The following to be automatically detected by the system by using appropriate Non- Intrusive sensors technology:

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Make		
	Model		
1.	The system should be capable to detect red light status by taking the signal feed from the traffic signal controller or video evidence shall be created for Red light violation / analytics method using RLVD / Overview focused at the red light.		
2.	<p>The camera should also be capable with Automatic Number Plate Recognition (ANPR) technology and used for evidence snap generation.</p> <ul style="list-style-type: none"> o RedLight Violation Detection (RLVD) o StopLine Violation Detection (SLVD) o No Helmet Violation detection (NHVD) o Free Left violation detection (FLVD) o Triple riding violation detection (TRVD) o Vehicle Parking Violation detection (VPVD) o Vehicle Wrong Direction detection (VWDD) 		
3.	<p>The system should be capable of capturing multiple infracting vehicles simultaneously in Different lanes on each arm at any point of time with relevant infractiondata like:</p> <ul style="list-style-type: none"> o Type of Violation o Date, time, Site Name and Location of the Infraction o Registration Number of the vehicle through ANPR <p>Camera system for each vehicle identified for infraction</p>		
4.	<p>The system should be equipped with a camera system to record a digitized image/ video of the violation, covering the violating vehicle with its surrounding and current state of signal (Red/Green/Amber) by which the system should clearly show nature of violation and proof thereof:-</p> <p>When it violates thestop line.</p> <p>When it violates the red signal.</p>		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Besides, a closer view indicating readable registration number plate patch of the violating vehicle for court evidence for each violation should be taken by an ANPR camera. One camera should cater to one lane (Approx. lane width 3.5 mtr).		
5.	The system shall be able to detect all vehicles infracting simultaneously in each lane/ arm at the junction as per locations provided. It should also be able to detect the vehicles infracting serially one after another in the same lane. The vehicles should be clearly identifiable and demarcated in the image produced by the camera system		
6.	The Evidence image produced by the system should be wide enough to give the exact position of the infracting vehicles with respect to the stop line and clearly indicate color of the Traffic light at the instant of Infraction even if any other means is being used to report the color of the light		
7.	The system should interface with the traffic controller to validate the color of the traffic signal reported at the time of Infraction so as to give correct inputs of the signal cycle		
8.	The system should capture the License Plate of the vehicles violating the red light or stop line when the signal is Red		
9.	The system should have provisions to either detect red light status by taking the signal feed from the traffic signal controller or by video analytics method using an evidence camera. The evidence camera should record the evidence snap showing the violating vehicle and the traffic signal status		
10.	The system should have the functionality export the type of violation evidence with water mark and encryption as per the techno-legal requirements		
11.	The system should synchronize the evidence camera, license plate recognition camera and store the record in database with License plate image, image of the vehicle, and at least five snaps showing clearly that the vehicle is crossing the red light / stop line while the signal is RED. The needed storage and hardware sizing in cloud must be provisioned by the bidder for 30 days.		
12.	The system should allow mapping of multiple ANPR cameras to their native or a single evidence camera associated with the traffic junction		
13.	The system should allow capturing multiple evidence snaps based on the time duration before, during and after the event.		
14.	The system should allow restricting an operator to a single or multiple traffic junction/s and associated cameras. The operator user credential must be secure and system shall have single sign on based authentication mechanism which should be cloud compatible		
15.	The system should have function to forward the generated alerts to designated email and mobile phone number.		
16.	The system should detect triple riding and No helmet detection (Both riders in case of two wheelers) and shall be synchronized with ANPR system		
17.	The system should have capability to detect Free Left Violation and shall be synchronized with ANPR system.		
18.	The system should have capability to detect Vehicle Parking Violation and shall be synchronized with ANPR system		

S. No.	Description	Compliance (Y/N)	Documentation Reference
19.	On site-out station processing unit communication & Electrical Interface should automatically reset in the event of a program hang up and restart on a button press. However, the system should start automatically after power failure		
20.	The communication between the on-site outstation processing unit housed in the junction box and the detection systems mounted on the cantilever shall be through appropriate secured technology		
21.	The system should have secure access mechanism for validation of authorized personnel		
22.	Roles and Rights of users should be defined in the system as per the requirements of the client		
23.	Deletion or addition and transfer of data should only be permitted to authorized users		
24.	A log of all user activities should be maintained in the system.		
25.	All formats of the stored data with respect to the infractions should be Non-Proprietary		
26.	The system should have the capability to transfer the data to TCCC through proper encryption in real time for verification of the infraction and processing of e-challan. Proposed application for traffic Violation Detection System (TVDS) should follow the national cyber security policy to ensure that the critical information processed and stored by the TVDS application is secure from cyber-attacks / hacking / hijacking. Bidder should submit required certifications / test report from competent government empaneled agency.		
27.	In the event that the connectivity to the TCCC is not established due to network/connectivity failures, then all data pertaining to the infraction shall be stored on site and will be transferred once the connectivity is re-established automatically. There shall also be a facility of physical transfer of data on portable device whenever required. There should be a provision to store minimum one week of data at each site / TCCC on a 24x7 basis considering maximum optimization of bandwidth usage.		

2.13 RLVD Application

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Make		
	Model		
1.	It should be capable of importing violation data for storage in database server in Cloud which should also be available to the Operator for viewing and retrieving the violation images and data for further processing. The program should allow for viewing, sorting, transfer & printing of violation data.		
2.	It should generate the photograph of violations captured by the RLVD system which include a wider view covering the violating vehicle with its surrounding and a close review indicating readable registration number plate patch of the violating vehicle or its web link on notices for court evidence		
3.	All RLVD units should be configurable using the software at the Central Location.		
4.	Violation retrieval could be sorted by date, time, location and		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	vehicle registration number and the data structure should be compatible with NOIDA Police database structure. It should also be possible to carry out recursive search and wild card search.		
5.	The operator at the back office should be able to get an alarm of all fault(s) occurring at the camera site (e.g. camera failure, failure of linkage with traffic signal, connectivity failure, Camera tampering,)Health monitoring dashboards must be a part of the ANPR / RLVD application proposed.		
6.	The automatic number plate recognition Software will be part of the supplied system, Success rate of ANPR will be taken as 80% or better during the day time and 60% or better during the night time with a standard number plate		
7.	The application software should be integrated with the E Challan software for tracing the ownership details of the violating vehicle and issuing/printing notices. Any updates of the software (OS, Application Software including any proprietary software), shall be updated free of cost during the contract period by the SI		
8.	Image zoom function for number plate and images should be provided. In case the number plate of the infracting vehicle is readable only through the magnifier then in such cases the printing should be possible along with the magnified image.		
9.	Various users should be able to access the system using single sign on should be role based and active directory or any equivalent cloud ready solution. Different roles which should be defined (to be finalized at the stage of SRS) could be Administrator, Supervisor, Officer, Operator etc. The Single Sign On solution could be Active directory or ADFS or equivalent cloud ready solution.		
10.	Apart from role based access, the system should also be able to define access based on location		
11.	Rights to different modules / Sub-Modules / Functionalities should be role based and proper log report should be maintained by the system for such access		
12.	Components of the architecture must provide redundancy and ensure that there are no single points of failure in the key project components. Considering the high sensitivity of the system, design shall be in such a way as to be resilient to technological sabotage. To take care of remote failure, the systems need to be configured to mask and recover with minimum outage. The system must be designed to ensure any ANPR / RLVD camera failure would impact only that specific lane and not the entire junction.		
13.	The architecture must adopt an end-to-end security model that protects data and the Infrastructure from malicious attacks, theft etc. Provisions for security of field equipment as well as protection of the software system from hackers and other threats shall be a part of the proposed system. Using Firewalls and Intrusion detection systems such attacks and theft shall be controlled and well supported (and implemented) with the security policy as required. The virus and worm's attacks shall be well defended with Gateway level Anti-virus system, along with workstation level Anti-virus mechanism. There shall also be an endeavor to make use of the SSL/VPN technologies to have secured communication between applications and its end		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	users. Furthermore, all the system logs shall be properly stored & archived for future analysis and forensics whenever desired		
14.	The evidence of Infraction should be encrypted and protected so that any tampering can be detected		
15.	Apart from Red-Light violation detection, the system should perform ANPR on all the vehicles passing the site and send alert to the central server on detection of any Hot listed vehicles (whose numbers have been marked as Stolen, Wanted, etc at the Central server) and alarm process followed by step by step SoP process for each kind of violation.		
16.	The system should have an option for the user to enter Hot-Listed vehicles at the Central Server and the same should be sent to all the sites automatically over the network		
17.	The system should have the capability to classify the vehicle under categories such as car, two-wheeler, heavy vehicle, etc		
18.	Ease of configuration, ongoing health monitoring, and failure detection are vital to the goals of scalability, availability, and security and must be able to match the growth of the environment		
19.	System shall use open standards and protocols to the extent possible and declare the proprietary software wherever used		
20.	The user interface should be user friendly and provide facility to user for viewing, sorting and printing violations. The software should also be capable of generating query based statistical reports on the violation data		
21.	The data provided for authentication of violations should be in an easy to use format as per the requirements of user		
22.	User should be provided with means of listing the invalid violations along with the reason(s) of invalidation without deleting their cord(s)		
23.	Basic image manipulation tools (zoom etc.) should be provided for the displayed image but the actual recorded image should never change		
24.	Log of user actions be maintained in read only mode. User should be provided with the password and ID to access the system along with user type (admin, user)		
25.	Image should have a header/footer depicting the information about the site IP and violation details like date, time, equipment ID, location ID, Unique ID of each violation, lane number, Registration Number of violating vehicle and actual violation of violating vehicle etc. so that the complete lane wise junction behavior is recorded including (Red Light violation and Stop Line Violation)		
26.	Number plate should be readable automatically by the software/interface. There should be user interface for simultaneous manual authentication / correction and saving as well Interface for taking prints of the violations (including image and above details)		
27.	Vehicle detector sensor / camera should look at junction traffic and be able to detect vehicle presence at each approach. This is to make sure that ATCS systems work based on vehicle presence & traffic congestion. Vehicle detector camera shall also be used as evidence camera optionally, considering solution optimisation.		

2.14 Red Light Violation Detection and ANPR System

The system should be capable of generating a video & minimum 3 snapshots in any of the standard industry formats (MJPEG, JPG, AVI, MP4, MOV, etc) with at least 10 frames per second. The video shall be from t-5 to t+5 sec of the violation and should also be recorded (being the instant at which the infraction occurred)

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Make		
	Model		
1	Objective		
a)	Capture the License Plate of the vehicles crossing the Stop line when the signal is Red. The system should have both provisions to detect red light status by taking the signal feed from the traffic signal controller or by video analytics method using another camera (Evidence Camera) focused at the red light. The evidence camera or native context camera of ANPR should also be used for evidence snap generation.		
b)	Generate sufficient evidential proof that the offence has taken place.		
c)	To penalize the offenders by issuing Challans to them against the offence with Sufficient visual evidence of the offence.		
d)	To preserve the records for future analysis so that corrective actions are to be taken to curb the tendency of people to commit such offences.		
2	RLVD sub - system must have the following components (Bidder proposing RLVD through direct traffic controller with ANPR camera integration may ignore the below compliance)		
a)	Standard IP camera for License Plate Capture: Standard ONVIF compliant Minimum 2 MP IP cameras complying to technical specifications mentioned in RFP with appropriate lens. The Camera should be able to stream MJPEG video at 25 fps for 2 MP resolutions. The system should support all standard brands of cameras satisfying the given specification. One camera should cover at least 3.5 meter width of lane, and capture the license plates of vehicles which violates the traffic signal and moving at a speed of 0 to 100 km/hr. Camera should provide http URL to take full resolution snapshots of the scene within 0.2 sec while the continuous video streaming is on. Standard IP camera for Traffic Light Status capture shall be used to capture at least 3 snaps showing clearly that the vehicle is crossing the stop line even when the signal is RED.		
b)			
c)	The system must have capability to take feed from Traffic Controller to know signal status. This is essential if the evidence generation camera goes out of order for any reason or the user chooses not to install this additional camera.		
d)	The IR-illuminator is required to capture license plate at night time when there is not sufficient illumination at site. The IR-illuminator can be external or internal as per solution or technology proposed.		

S. No.	Description	Compliance (Y/N)	Documentation Reference
e)	RLVD software should be deployable in standard servers running either Windows or Linux Operating system, and should have open interface to be integrated with the Challan generating sub-system and the traffic signal controller system. Challan generating system and the RLVD software should interact on open interface so that each of the systems can be chosen independently.		
3	Functionality		
a)	It synchronizes among the RED-light Status camera, License plate camera and evidential proof capture camera and store the record in Database with License plate image, image of the vehicle, and at least 3 snaps showing clearly that the vehicle is crossing the stop line while the signal is RED. It should be able to intimate the incidence in real time through SMS/MMS to designated Cell phone, so that this facility can be used to alert the traffic personnel posted at the next traffic intersection.		
b)	The system should generate Alarms at control room software if any signal is found not turning RED within a specific duration of time. The Alert should also be sent through SMS using cellular network reporting such incidence.		
c)	The system should provide facility to search for the cases of violations occurred during any specific span of time, and provide a statistical analysis of the number of such incidences occurring during various days of the month, various months of the year in graphical forms. A report of all such incidences should be automatically generated by the system in a spreadsheet (.xls format), and can be automatically e-mailed to designated officials.		
d)	The system should provide facility to privileged users to manually check the entry in database and edit the numbers if necessary, before the numbers are fed to the Challan generating sub-system. An audit trail should be maintained to record such editing activities.		
e)	The System should also record the video of all the cameras/selected cameras using a predefined and user configurable schedule. The recorded video can be searched using the following filters:		
	i. Appearance of a particular license plate.		
	ii. When the signal is RED		
	iii. When the signal is GREEN		
	iv. During any given date-time span.		
f)	The system should capture standard vehicle's number plates with an accuracy of at least 80% at day time and at least with an accuracy of 60% at night time for standard number plates.		
g)	The system should be able to show Live video from these cameras.		
h)	Additionally, the system should be able to store license plates numbers of at least 10,000 suspected vehicles at a time and should generate an Alert is any one of the vehicles is found crossing the stop line (irrespective whether the signal is GREEN or RED) in form of Video popup at the Monitor and/or SMS on Cell phones. SMS on Cell phones should be sent using cellular network only.		

2.15 Hot List Detection Module

The Hot list detection module shall enable monitoring of vehicle flow at deployed locations and generation of automatic alerts based on hotlists. It should identify and capture the number plate of the vehicles and display the same in the text format after removing the unwanted areas / extra written material from the number plate. The system should generate automatic audio/visual alert at local/central control station on detection of any vehicle in the system Hotlists.

The System shall have the following features for Hotlist Detection:

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Make		
	Model		
	Alert Generation		
1.	The system should have option to input certain license plates according to the hot listed categories like "Wanted", "Suspicious", "Stolen", etc. by authorized personnel		
2.	The Hotlist detection module shall enable monitoring of vehicle flow at deployed locations and generation of automatic alerts based on hotlists. It should identify and capture the number plate of the vehicles and display the same in the text format after removing the unwanted areas / extra written material from the number plate.		
3.	The system should have option to add new hotlist category by authorized personnel		
4.	The system should generate automatic audio/visual alert at local/central control station on detection of any vehicle in the system Hotlists.		
5.	The system should be able to generate automatic alarms to alert the control room personnel for further action, in the event of detection of any vehicle falling in the Hot listed categories		
6.	On detection of any vehicle in the Hotlist categories, the system should generate alert at the control room within less than 2-3 seconds (subject to network availability)		
7.	For all Hot listed vehicle transactions, the system should also be able to store a video few seconds before and after the transaction		
	Mounting structure		
8.	Should be cantilever mounted and shall have minimum 6 Mtrs. height with appropriate vertical clearance under the system from the Road surface to ensure no obstruction to vehicular traffic		
9.	It shall be painted with one coat of primer and two coats of PU paint. The equipment including poles, mountings should have an aesthetic feel keeping in mind the standards road Infrastructure (e.g Poles etc) currently installed at these locations. The equipment should look "one" with the surroundings of the location and not look out of place		

S. No.	Description	Compliance (Y/N)	Documentation Reference
10.	Rugged locking mechanism should be provided for the onsite enclosures and cabinets		
Speed Violation Detection Systems			
11.	The system should be equipped with a camera system & sensor to record a digitized image/ video frames of the violation, covering the violating vehicle without any dependencies on image, quality of number plate data		
12.	The system should have proper TEST Reports and CERTIFICATION from leading Indian / global labs in accordance to legally approved law regulations to generate e-challans		
13.	The offered system should be able to detect vehicle license plates along with speed violation detection for vehicles having speed more than 100 KMPH (with suitable camera with required frame rate) with an accuracy of at least 95%. Speed Detection system should have accuracy of 100kmph +/-5 kmph. Certified and tested for speed accuracy from government agency/s under Central Motor Vehicle Rule (CMVR) 126 like ARAI, ICAT, VRDE, GARC etc)		
14.	The system should be able to capture the number plate in night with the help of IR illuminator against the head light glare of the approaching vehicle and provide good performance		
15.	The system should generate an automatic alert in case of a speed violation		
16.	The system should have the capability to classify the vehicle under categories such as car, two-wheeler, heavy vehicle in all complete darkness and FOGGY weather		
17.	The system should allow the operator to set different speed limits for different categories of vehicles		
18.	The event window should show the video associated with the event. The window should also show at least five snapshots associated with the event		
19.	The system should allow the operator to flag the event for storing the event perennially		
20.	Speed sensor should provide speed of vehicle in all light conditions, Fog weather and should have proper SAT, FAT reports available		
21.	The system should be capable of capturing multiple infracting vehicles simultaneously in defined lanes at any point of time simultaneously with relevant infraction data like: <ul style="list-style-type: none"> a. Type of Violation b. Speed of violating vehicle c. Notified speed limit d. Date, time, Site Name and Location of the Infraction e. Registration Number of the vehicle through ANPR Camera system for each 		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	violating vehicle.		
22.	The system shall provide the No. of vehicles infracting simultaneously in each lane. The vehicles will be clearly identifiable and demarcated in the image produced by the camera system		
Speed Violation Application			
23.	It should be capable of importing violation data for the Operator for viewing and retrieving the violation images and data for further processing. The programme should provide for sort, transfer & print command		
24.	It should generate the photograph of violations captured by the outstation system which include a wider view covering the violating vehicle with its surrounding and a closer view indicating readable registration number plate patch of the violating vehicle or its web link on notices for court evidence		
25.	All outstation units should be configurable using the software at the Central location		
26.	Violation retrieval could be sorted by date, time, location and vehicle registration number and data structure should be compatible with RTO data base structure		
27.	The operator at the back office should be able to get an alarm of any possible fault(s) at the camera site (outstand) (e.g. sensor failure, camera failure, failure of linkage with traffic signal, connectivity failure, Camera tampering, sensor tampering)		
28.	The automatic number plate recognition Software should be part of the supplied system, or can be provided separately as add on module to be integrated with violation detection. Success rate of ANPR will be taken as 80% or better during the day time and 60% or better during the night time on standard number plates		
29.	Image zoom function for number plate and images should be provided		
30.	The application software should be integrated with the RTO software for tracing the ownership details of the violating vehicle and issuing/printing notices		
31.	Various users should be access the system using single sign on and should be role based. Different roles which could be defined (to be finalized at the stage if SRS) could be Administrator, Supervisor, Officer, Operator, etc		
32.	Apart from role based access, the system should also be able to define access based on location		
33.	Rights to different modules / Sub-Modules / Functionalities should be role based and proper log report should be maintained by the system for such access		
34.	The architecture must adopt an end-to-end security model that protects data and the infrastructure from malicious and virus attacks using anti-virus and Firewall provisions for security of field equipment as		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	well as protection of the software system from hackers and other threats shall be a part of the proposed system		
35.	The system should be able to do no helmet and Triple ridding detection for 2-wheelers.		
36.	It should be able to identify the make of vehicle by logo detection.		
37.	Ease of configuration, ongoing health monitoring, and failure detection are vital to the goals of scalability, availability, and security and must be able to match the growth of the environment		
38.	System shall use open standards and protocols to the extent possible		
39.	The user interface should be user friendly and provide facility to user for viewing sorting and printing violations. The software should also can generate query based statistical reports on the violation data		
40.	The data provided for authentication of violations should be in an easy to use format as per the requirements of user unit		
41.	User should be provided with means of listing the invalid violations along with the reason(s) of invalidation without deleting their cord(s)		
42.	Basic image manipulation tools (zoom etc.) should be provided for the displayed image but the actual recorded image should never change		
43.	Log of user actions be maintained in read only mode. User should be provided with the password and ID to access the system along with user type (admin, user)		
44.	Image should have a header and footer depicting the information about the site IP and violation details like viz. date, time, equipment ID, location ID, Unique ID of each violation, lane number, Regn. Number of violating vehicle and actual violation of violating vehicle etc. so that the complete lane wise junction behavior is recorded viz. (Speed of violating vehicle, notified speed limit, Speed Violation with Registration Number Plate Recognition facility. Number plate of cars, buses/HTVs should be readable automatically with the OCR feature by the software/interface. There should be user interface for simultaneous manual authentication / correction and saving as well		
45.	Number plate of cars, buses/HTVs should be readable automatically by the software/interface. There should be user interface for simultaneous manual authentication / correction and saving as well		
46.	Interface for taking prints of the violations (including image and above details		

2.16 Variable Message Signboard Display (VMD)

S. No.	Description	Compliance (Y/N)	Documentation Reference
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S. No.	Description	Compliance (Y/N)	Documentation Reference
	Make		
	Model		
1.	The system should be capable to display warnings, traffic advice, route guidance and emergency messages to motorists from the TCCC in real time.		
2.	The VMB should display text and graphic messages using Light Emitting Diode (LED) arrays.		
3.	The System should able to display failure status of any LED at TCCC.		
4.	The System should support Display characters in true type fonts and adjustable based on the Operating system requirement.		
5.	The VMB workstation at the TCCC should communicate with the VMB controller through the network. It should send out command data to the variable message display controller and to confirm normal operation of the signboard. In return, the VMB workstation should receive status data from the VMB controller.		
6.	VMB controllers should continuously monitor the operation of the VMB via the provided communication network.		
7.	Operating status of the variable message display should be checked periodically from the ICC.		
8.	It shall be capable of setting an individual VMB or group of VMB's to display either one of the pre-set messages or symbols entered into the computer via the control computer keyboard or by another means.		
9.	It shall be capable of being programmed to display an individual message to a VMB or a group of VMB's at a pre-set date and time.		
10.	A sequence of messages/pictures/ pre-decided sign or group of signs shall be possible to assign for individual VMB or group of VMB's.		
11.	Variable Message Displays (VMB) application		
12.	Central Control Software allows controlling multiple VMB from one console.		
13.	Capable of programming to display all types of Message/ advertisement.		
14.	The system should have capability to divide VMB screen into multi-parts to display diverse form of information like video, text, still images, advertisements, weather info, city info etc.		
15.	Capable of controlling and displaying messages on VMB boards as individual/ group.		
16.	Capable of controlling and displaying multiple font types with flexible size and picture sizes suitable as per the size of the VMB.		
17.	Capable of controlling brightness & contrast through software.		

S. No.	Description	Compliance (Y/N)	Documentation Reference
18.	Capable to continuously monitor the operation of the Variable Message Display board, implemented control commands and communicate information to the TCCC via communication network.		
19.	Configurable scheduler on date/day of week basis for transmitting pre-programmed message to any VMB unit.		
Experience			
20.	The OEM of the Outdoor Direct View LED display should have minimum 100 Outdoor LED displays installed (similar or bigger size) in India(Government/PSU's) all of which shall be connected to a single network and controlled centrally with content being published centrally on all the displays.		
21.	OEM should be present in India for at least last 5 years with their own registered & service centre.		

2.17 Environment Sensors:

Sr. No	Description	Compliance (Y / N)	Relevant Document / Remarks
	Make		
	Model		
1	Environment sensors shall be smart to enable citizens and administrators to gather the air quality information in the city and to keep a check on their endeavors which impact environment and enable the city to take remedial action if required. Smart environment sensors will gather data about air quality, ambient conditions (temperature and humidity), levels of gases in the city (pollution) on an hourly and subsequently daily basis. It is for information of citizens and administration to further take appropriate actions during the daily course / cause of any event.		
	Basic Requirement of Environment Sensors: a) These environmental sensors can also be connected via 3G or 4G wireless network or WiFi networks. It is not mandatory to connect all sensors via MPLS fiber network. b) The data should be collected in a software platform that allows third party software applications to read that data through REST APIs. Various environment sensors shall sense the prevailing environment conditions and send the data to the integrated control system where real time data resides and the same shall be made available to various other departments and applications for decision making. It is preferred if		

Sr. No	Description	Compliance (Y / N)	Relevant Document / Remarks
	Make		
	Model		
	the platform also includes intelligent analytical engines that makes information meaningful to all stakeholders and helps ease decision making. c) The sensor management platform should allow the configuration of the sensor to the network and also location details etc. d) The sensors should be able to be managed remotely. This includes sensors being updated with calibration parameters, software upgrades if any. Sensors must also provide updates and detect faults with self-diagnosis functionality. e) Apart from information provision, the sensors must ensure data is transmitted securely and have security measures from sensors to the software platform. It should also ensure tamper detection mechanism in cases of vandalism, security breaches, etc.		

2.18 Video Management System (VMS)

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Make		
	Model		
1.	The Software shall be Scalable, Client Server based, Enterprise level capable to handle at least 5000 cameras in the same system by adding camera license and server.		
2.	The VMS software should ONVIF Profile S / G Conformant and independent of camera make and shall support different makes of cameras. (List of Supported Camera Make to be submitted).		
3.	The OEM shall have existing ONVIF membership for open integration with 3 rd party system / devices integration to meet project objective and functionality.		
	Recordings		
4.	Should record H.264 / H.265, MPEG4 or MJPEG in at minimum 25 fps at minimum Full HD (1080p) resolution for 30 days		
5.	In case Bidder is offering Cloud services, then, facility of hot Storage for 7 days and cold storage for 23 days / remaining days of the month at Cloud to be provided		
6.	Supports RTP over UDP, RTP over TCP and http streaming		
7.	Should support multiple brand IP camera and encoders		
8.	Should support dual streaming and recording at different qualities of videos		
9.	Option to do recordings on NAS, iSCSi, DAS, local or network drive. Defining different drive for each individual camera		
10.	Should have ability record audio along with video in		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	same recording file.		
11.	Option to define multiple recording paths		
12.	Pre-buffer and Post buffer recordings up to 20 minutes		
13.	Calculate storage size based on number of cameras, days and drives available in the system at full resolution and frame rate.		
14.	Option to record at low frame and high frame rate on Motion		
15.	Export recordings in SEF(Secured export format) / .avi / .mp4 / .asf formats. Must be playable in any OS Windows or Linux or Unix or Apple Mac		
16.	Export recording possible in client and remote PC also with proper authentication		
17.	Option for Window-Pop up, Email, Sound alarm on recording or video loss		
18.	Storage and Bandwidth calculation: Recoding size estimation for each hard disk attached to the server. Option to check disk size of individual camera		
19.	Image Enhancement on recorded videos. The image enhancement should be able enhance videos of fog, rain and low light conditions		
20.	The option of email and Video Pop up on Low disk space event. The system should alert user on low disk space event		
21.	Automatic archiving after set number of days and automatic recording deletion after disk full		
22.	The software should comply that all client to server and server to server communications are compressed and encrypted and connection specific key should be 256 bit AES and data encryption should be 256 bit AES.		
23.	VMS software should have the Encryption algorithm of 1096-bit RSA and hashing of SHA -512 for tamper proof data. The software should have native tool to check all the cyber security guidelines being implemented and reviewed time to time.		
24.	The exported video should be saved in SEF (Secure Export Format) / AVI / MP4 / ASF for secure non tamper file system with Password key which can be set upto 24 Characters. The Client application should support dual password mode for each user.		
25.	In the event of failure of connectivity to the central server the camera shall record video locally on the SD card automatically. After the connectivity is restored VMS shall support these recordings to be automatically merged with the server recording such that no manual intervention is required to transfer the SD card based recordings to server.		
Live, Playback & PTZ			
26.	Live View possible for minimum 64 cameras simultaneously on 1 screen or multiple monitors using software video wall		
27.	Dual Streaming and Automatic Switching from Low to High Quality on Full screen mode		
28.	Option to change Live View directly from cameras or		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	from VMS server using RTSP and HTTP options		
29.	It should support live view and Playback from minimum 10 clients- Both local and remote		
30.	Customized camera views based on: <ul style="list-style-type: none"> o User input number of cameras. o User chosen shape and size. o View sequencing with user driven time interval. 		
31.	Digital Zoom <ul style="list-style-type: none"> o Both complete live picture and Zoomed picture should be visible simultaneously while zooming. o Should be available On Live and Playback Videos. o Zoom available on snapshots too. 		
32.	PTZ <ul style="list-style-type: none"> o PTZ option available through mouse and joystick o Gaming joystick as well as PTZ joystick options available o On screen PTZ control with Click and Zoom facility o PTZ presets and tours setting 		
33.	Live view and Playback available at the same time with Playback window on top of live view window		
34.	Instant Playbacks available as window pop up on click of an event from Event Screen		
35.	Image Enhancement Analytic available in Playback. Option to sharpen the video image through scrollbar		
36.	Playback Navigation Tree View with Recording server, camera list, year/months list and the date wise play list.		
37.	Playlist with files listed for each date and or time. User can click on any file to play recording		
38.	E-map client should show icon blink and voice alert of the event. Should be able to take snapshots from professionally used mapping services like Google Map / Map my India etc., if connected to internet		
39.	Two-way audio communication between camera and VMS. Option to send/broadcast Audio to multiple cameras		
40.	Ability to Define a Virtual camera that focuses in the part of camera view be it live or playback. using Virtual Cameras, one can view chosen parts of the full recorded Camera View in a Separate Window. View Specific Area of interest in a virtual camera and choose per virtual camera for zooming, View, Aspect Ratio and resolution. Virtual cameras may overlap each other. 45 such Virtual camera can be made from one single camera view.		
41.	VMS OEM should have ISO latest certificates: ISO 9001:2015 / 27001		
Mobile Surveillance & Remote Viewing			
42.	Ability to view live video on iOS and Android phones or devices with or without installing proprietary Apps.		
43.	Ability to receive alerts on Mobile phones with SMS & should give live position of the Mobile phone on GIS		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Map		
44.	PTZ Control on Mobile App and Remote Locations		
45.	VMS and Mobile App support for multiple sites spread across WAN to be controlled and viewed from central location. The App must have GIS based interface for Live and Playback of Cameras also intelligence for connecting to any ANPR camera within reach for live number plate feeds to check for hot listed vehicles.		
46.	Remote Administration over internet.		
47.	Ability to make a Phone call / IVR on any alert or alarm		
	Streaming		
48.	Option for RTSP, HTTP , RTSP over HTTP streaming or both simultaneously at individual camera level.		
49.	Option to Transcode to lower bit rate stream at recording server level. The lower bit rate can be done for any individual camera and options of resolution at 640x480, 320x240 and Frame rate at 20 fps,10 fps. This helps in viewing video at low bandwidth.		
50.	Authentication parameters (username, password) for streaming to remote clients.		
	Administration & Failover		
51.	Automatic discovery of devices using UPnP and/or ONVIF		
52.	No software limit on number of cameras supported in single recording server		
53.	Add all cameras with single click. Apply settings to multiple cameras of same model with single click.		
54.	Failover- Automatic switch of user selected cameras to back- up server in case of failure. Time limit of failover for server, recordings and client should not be more than 60 seconds		
55.	Automatic Health check-up and activation of optimization modules once CPU reached more than 85%.		
56.	Add multiple recording servers under same management server.		
57.	User role based cameras and feature access. Define users with passwords and access to only specific cameras		
58.	Complete server logs including login access, system settings change, archiving events, video or recording loss and all activity done by administrator or any other user in the system. All supported edge based analytics in the camera must be integrated with the VMS provider.		
	Camera Device Support		
59.	Should support multiple brand IP camera, encoders and DVRs. No restriction on camera hardware.		
60.	Should support ONVIF protocol including Profile-S		
	VMS features to support on site-out station processing unit communication & Electrical Interface (Required when LPU based solution is proposed)		
61.	The Onsite-out station processing unit communication & Electrical Interface should automatically reset in the		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	event of a program hang up and restart after power failure.		
62.	The system should have secure access mechanism for validation of authorized personnel.		
63.	Deletion or addition and transfer of data should only be permitted to authorized users.		
64.	A log of all user activities should be maintained in the system.		
65.	Roles and Rights of users should be defined in the system.		
66.	The data shall be transferred to the TCCC in real time for verification of the infraction and processing of challan.		
67.	In the event that the connectivity to the TCC is not established then all data pertaining to the infraction shall be stored on site and will be transferred once the connectivity is re- established automatically		

2.19 Command and Control Center Solution

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Make		
	Model		
1.	The Traffic Command Control Center Software (TCCC) shall be an enterprise class IP-enabled application solution. The TCCC shall support the seamless unification of various City-wide smart elements IP video management system (VMS), IP automatic license plate recognition system (ALPR), Variable Message Display Sign boards (VMD), Emergency response system, City IOT systems etc. under a single platform. The TCCC user interface (UI) applications shall present a Integrated interface for the management, configuration, monitoring, and reporting of various embedded systems and associated edge devices.		
2.	The TCCC platform must be a true Integrated management experience for city infrastructure, simplifying control room operation and system integration, minimizing total cost of ownership, and increasing operational efficiency critical to rapid decision-making.		
3.	The TCCC Platform shall maximize real-time monitoring and control efficiency from one workstation through the synchronized control of high-resolution blueprints, images, streaming camera data, and system alerts which allows for interaction between all relevant data		
4.	Allows simple and accessible Integration with other independent control systems through a single Unification point with consistent user interface and better operational efficiency.		

S. No.	Description	Compliance (Y/N)	Documentation Reference
5.	TCCC shall be open architecture based, highly scalable and able to integrate multiple disparate systems seamlessly on a common platform		
6.	TCCC system shall provide a real time Common Operating Picture (TCCC) of the area involving all agencies using a simple Operator / User friendly interface.		
7.	The system shall support various sensors like Cameras, GPS, Voice devices, Storage devices, Sensor inputs from other Utility applications/ systems		
8.	The TCCC platform shall provide a dashboard functionality to manage workflows by integrating information from different agencies and systems to facilitate responsive decision making in City traffic scenario.		
9.	The TCCC platform should provide a cross-agency collaboration tool to support instant communication between various user groups and authorities.		
10.	TCCC Architecture		
11.	<ul style="list-style-type: none"> a) The Application shall be an IP enabled solution. All communication between the servers and other clients shall be based on standard TCP/IP protocol and shall use encryption with digital certificates to secure the communication channel. b) The Application shall protect against potential database server failure and continue to run through standard off-the-shelf solutions. c) The Application shall support an unrestricted number of logs and historical transactions (events and alarms) with the maximum allowed being limited by the amount of hard disk space available. d) The TCCC Application shall support native and off the-shelf failover options without any dependency on external application for both Hardware and Application level fail over. e) The TCCC application shall provide in built Emergency and Generic message library which could be provisioned and pushed to the Variable Sign boards over IP network by the operators on Dynamic basis from the same platform. The application should provide message prioritization feature. f) The TCCC should have the ability to stream messages to the variable sign boards on dynamic and continuous basis. In case of any Cyber-attack or hack on the variable sign boards the operators must have the ability to take control on the Messaging to be sent to the Sign boards. g) The TCCC platform should support distributed deployment of functions (workflows & policies) across city's network and compute infrastructure with centralized management 		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	<p>and control.</p> <p>h) The TCCC Platform should be able to be deployed on a public cloud for disaster recovery.</p> <p>i) The TCCC application solution should provide operators and managers with a management dashboard that provides a real time status and is automatically updated when certain actions, incidents and resources have been assigned, pending, acknowledged, dispatched, implemented, and completed. The above attributes shall be color-coded.</p> <p>j) The TCCC application must provide a uniform, coherent, user-friendly and standardized interface for all the other modules / applications getting Integrated on the platform.</p> <p>k) It shall be possible to combine the different views onto a single screen or a multi-monitor workstation.</p> <p>l) The TCCC application system should generate Notification, Alert and Alarm messages that should be visible within the Dashboard and Mobile App as required</p>		
12.	Alarm management: Should Support the following functionality		
13.	<p>a) Create and modify user-defined alarms. An unrestricted number of user-defined alarms shall be supported.</p> <p>b) Assign a time schedule or a coverage period to an alarm. An alarm shall be triggered only if it is a valid alarm for the current period.</p> <p>c) Set the priority level of an alarm and its reactivation threshold.</p> <p>d) Define whether to display live or recorded video, still frames or a mix once the alarm is triggered.</p> <p>e) Provide the ability to display live and recorded video within the same video tile using picture-in-picture (PiP) mode.</p> <p>f) Provide the ability to group alarms by source and by type.</p> <p>g) Define the recipients of an alarm. Alarm notifications shall be routed to one or more recipients. Recipients shall be assigned a priority level that prioritizes the order of reception of an alarm</p> <p>h) The workflows to create, modify, add instructions and procedures, and acknowledge an alarm shall be consistent for various systems.</p> <p>i) The ability to create alarm-related SOP. The SOP shall be user-defined.</p> <p>j) The user shall can acknowledge alarms,</p>		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	create an incident upon alarm acknowledgement, and put an alarm to snooze. k) The user shall be able to spontaneously trigger alarms based on something he or she sees in the TCCC system Dashboard		
14.	Operating Procedures Module:		
15.	Should have inbuilt SOP framework and configuration tool to create and modify the SOPs. System should provide tool to define/create any event/rule based Standard Operating Procedure (SoP) for decision making by optimizing the time to resolution for emergency and crisis situations.		
16.	Reporting		
17.	<ol style="list-style-type: none"> The TCCC shall support report generation (database reporting) for various systems Integrated into the platform. The workflows to create, modify, and run a report shall be consistent for all systems. The TCCC shall support the following types of reports: <ul style="list-style-type: none"> Alarm reports Video-specific reports (archive, bookmark, motion, and more). Configuration reports. ANPR-specific reports (mobile ANPR playback, hits, plate reads, reads/hits per day, reads/hits per ANPR zone, and more). System Health activity and health statistics reports for proactive maintenance. Generic Reports, Custom Reports and Report Templates The platform should have capability to provide access to real time data and historical for reporting and analysis the user shall be able to customize the predefined reports and save them as new report templates. There shall be no need for an external reporting tool to create custom reports and report templates. Customization options shall include setting filters, report lengths, and timeout period. The user shall also be able to set which columns shall be visible in a report. The sorting of reported data shall be available by clicking on the appropriate column and selecting a sort order (ascending or descending). The TCCC shall support comprehensive data filtering for most reports based on entity type, event type, event timestamp, custom fields, and more. The user shall be able to click on an entity within an existing report to generate additional reports from the Monitoring UI. The TCCC shall support the following actions 		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	<p>on a report: print report, export report to a PDF/Microsoft Excel/CSV file, and automatically email a report based on a schedule and a list of one or more recipients.</p> <p>8. Reporting function is part of command and control dashboard visualization tool. It shall provide information about status of the command and control on managing the security incidents across the locations. Reporting function should enable operator to create reports in either graphical format or flat tabular format. Reports shall be created automatically or manually by operator whenever required. The reports should be generated and exported as a Microsoft word excel format or an acrobat format by operator.</p> <p>9. Reporting function is part of command and control dashboard visualization tool. It shall provide information about status of the command and control on managing the security incidents across the locations.</p> <p>10. Reporting function should enable operator to create reports in either graphical format or flat tabular format. Reports shall be created automatically or manually by operator whenever required. The reports should be generated and exported as a Microsoft word excel format or an acrobat format by operator</p>		
18.	Real Time Dashboard:		
19.	Real time dashboard should provide the real-time information about the security situation so called Situational Awareness for the Authorities and senior officials in a single go.		
20.	Incident Management & Reporting:		
21.	The TCCC shall support the configuration and management of events. A user shall be able to add, delete, or modify an action tied to an event if he has the appropriate privileges.		
22.	The TCCC shall receive all incoming events from one or more Integrated Systems. The TCCC shall take the appropriate actions based on user-define event/action relationships.		
23.	Incident reports shall allow the security operator to create reports on incidents that occurred during a shift. Both videos related, and other Integrated Systems related incident reports shall be supported.		
24.	The operator shall be able to create standalone incident reports or incident reports tied to alarms.		
25.	The operator shall be able to link multiple video sequences to an incident, access them in an incident report.		
26.	It shall be possible to create a list of Incident categories, tag a category to an incident, and filter the search with the category as a parameter.		

S. No.	Description	Compliance (Y/N)	Documentation Reference
27.	Incident reports shall allow the creation of a custom form on which to input information on an incident.		
28.	Incident reports shall allow entities, events, and alarms to be added to support at the report's conclusions.		
29.	The Incident Management System must have following features as minimum- <ul style="list-style-type: none"> • Live video & Incident Handling on the Map • Manual creation of incident • Incident Summary View Report • Incident ownership and handover • Execution of corresponding Standard Operating Procedures(SOPs) • Incident Escalation- Manual/Time basedAuto acknowledge Incident 		
30.	Configuration User Interface:		
31.	The Configuration UI application shall allow the administrator or users with appropriate privileges to change the system configuration.		
32.	The configuration of all embedded systems shall be accessible via the Configuration UI.		
33.	The Configuration UI shall have a home page with single-click access to various tasks.		
34.	The Configuration UI shall include a variety of tools such as troubleshooting utilities, import tools, and a unit discover tool, amongst many more.		
35.	The Configuration UI shall include a static reporting interface to: <ul style="list-style-type: none"> • View historical events based on entity activity. The user shall be able to perform such actions as printing a report and troubleshooting a specific access event from the reporting view. • View audit trails that show a history of user/administrator changes to an entity. • Common entities such as users, schedules, alarms and many more, can be reused by all embedded systems in platform. 		
36.	Smartphone and Tablet App General Requirements:		
37.	The TCCC shall support mobile apps for various off-the-shelf smartphones and tablets. The mobile apps shall communicate with the Mobile Server of the TCCC over any WiFi or mobile network connection.		
38.	Mobile apps shall communicate with the TCCC via a Mobile. Communication between the mobile device and the Mobile Server shall support encryptions.		
39.	System Health Monitor:		
40.	The TCCC shall monitor the health of the system, log health related events, and calculate statistics.		
41.	Detailed system care statistics will be available through a web-based dashboard providing health metrics of TCCC entities and roles, including Uptime		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	and mean-time-between-failures.		
42.	TCCC Audit and User Activity Trails:		
43.	The TCCC shall support the generation of audit trails. Audit trails shall consist of logs of operator/administrator additions, deletions, and modifications.		
44.	Audit trails shall be generated as reports. They shall be able to track changes made within specific time periods. Querying on specific users, changes, affected entities, and time periods shall also be possible.		
45.	For entity configuration changes, the audit trail report shall include detailed information of the value before and after the changes.		
46.	The TCCC shall support the generation of user activity trails. User activity trails shall consist of logs of operator activity on the TCCC such as login, camera viewed, badge printing, video export, and more.		
47.	Third Party System Unification:		
48.	Service shall permit the central user management of the TCCC users, user groups and other Access control groups.		
49.	The TCCC shall support multiple approaches to integrating third party systems and another City application. These shall include: Software Development Kits (SDKs), REST-based Web Service SDK etc.		
50.	A TCCC SDK / API shall be available to support custom development for the platform.		
51.	The SDK shall enable end-users to develop new functionality (user interface, standalone applications, or services) to link the TCCC to third party business systems and applications such as Badging Systems, Human Resources Management Systems (HRMS), and Enterprise Resource Planning (ERP) systems.		
52.	The SDK shall provide an extensive list of programming functions to view and/or configure core entities such as: users and user groups, alarms, custom events, and schedules, and more.		
53.	Security Requirements:		
54.	The TCCC Application shall be an IP enabled solution. All communication between the Servers, Clients and external systems shall be based on standard TCP/IP protocol and shall use encryption with digital certificates to secure the communication channel.		
55.	The Application shall limit the IP ports in use and shall provide the Administrator with the ability to configure these ports.		
56.	The VMS system Integrated with the TCCC application shall support only secured media stream requests, unless explicitly configured otherwise. Secured media stream requests shall be secured with strong certificate-based authentication. Client authentication for media stream requests is claims-based and may		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	use a limited lifetime security token.		
57.	The OEM of TCCC application shall have an online or offline Cyber Security emergency response centre to update on latest vulnerabilities and provide needed assistance during any cyberattacks on the system.		
58.	The OEM of TCCC should provide a detailed Cyber Security hardening guide outlining the best practices supported in the application to mitigate Cyber threats.		
59.	All other needed best practices for best Cyber Security Standards must be followed and adopted in the development, deployment and adoption phases of the project.		
60.	Collaborative Monitoring:		
61.	The Bidder has to provide a solution, which will have a collaborative framework for receiving video feeds from various systems and sub-systems of public and private establishments. The list of establishments shall be provided by Police Department from time to time.		
62.	As a part of the collaborative monitoring effort, the system shall also facilitate citizens after authentication to upload video feeds to the CCTV System. This upload of video shall be subject to administrative and technical checks so that frivolous and defamatory videos are not uploaded in the system.		
63.	VMS shall have provision to ensure that such video feeds are continuously streamed on one of the displays of the Video Wall.		
64.	Further, ad hoc requirement for installation of cameras at fairs and festivals may also be required to be undertaken by the successful bidder. The successful bidder has to extend full support during ad hoc installation of cameras in fairs and festivals in the city. The bidder would be required to study the requirement of all such integration and submit detailed report for integration of collaborative cameras and cameras to be installed during fairs and festivals. The bidder is expected to enable the command and control centre for live viewing and storing of the feed.		
65.	Centralized Helpdesk:		
66.	It is envisaged that the centralized helpdesk, functioning as proposed below, would be managed by the bidder and shall serve following objectives: <ul style="list-style-type: none"> • Act as the Point of Contact for the users of Surveillance System • Own an Incident throughout its Lifecycle • Communicate effectively with Police / Home Dept. Officers and IT support teams. • Maintain high user satisfaction levels • Maintain the SLA statistics & submit quarterly report to Police / Home Department • A general process flow for the helpdesk management is depicted in the flow-chart given as follows bidder shall have to prepare and submit a detailed Helpdesk Policy in 		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	consultation with all the stakeholders prior to the Go Live.		
67.	Analytics:		
68.	The TCCC Platform shall be able to gather data from different sources give multiple agencies the ability to access, visualize and direct assets and resources using TCCC and its integrated modules using a common operating picture. Tap in to the relevant data sources and allow stake holders to better view events to quickly gain control of situations.		
69.	The TCCC should have the ability to unify upcoming city assets like CAD, Emergency response, criminal tracking etc. related to public safety.		
70.	The TCCC should continuously analyses information from various IOT sensors and data points assisting front line teams by bringing in relevant information and events, correlate both temporal & geo spatial data to prepare ground staff with meaningful insights prior to they arrive on site.		
71.	The TCCC should supports various open vendor analytics to help city to gain insights and alerts from video and other data sources to make efficient use of resources.		
72.	The system should be integrated with the data mining services that connect to various urban solutions and database available		
73.	TCCC should be capable to integrate open social media platforms and carry detailed cloud based social media analytics (e.g. sentiment analysis) to enable Police Department to track and monitor certain trending incident		
74.	TCCC shall provide Digital Evidence Management for critical events and incidences with provision for long-term tamper-proof data preservation.		
75.	System should be able to package related evidence documents, video clips, audio clips		
76.	GIS Integration:		
77.	GIS system provided by city or government of India and TCCC solution need to integrate with the following City systems.		
78.	The TCCC shall support GIS Maps in following file format PDF, JPG, PNG, Vector PDF Map, Web Map Service (WMS) defined by the Open Geospatial Consortium (OGC), Google Map –aerial; terrain, Bing Map, aerial, satellite, hybrid, ArcGIS/ESRI, Open Platform GIS Applications.		
79.	It shall be possible to configure a mixed set of maps made of GIS, online providers and private imported files and link them together.		
80.	The TCCC shall provide a map centric interface with the ability to command and control all the system capabilities from a full screen map interface.		
81.	It shall be possible to span the map over all screens of		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	the TCCC client station. In the scenario where the map is spanned over all the screens of the TCCC client station it shall be possible to navigate the map including pan and zoom, and the map's moves shall be synchronized between all screens. Spanning the map over multiple screen must provide the same command and control capabilities than in a single screen display.		
82.	Ability to display layer of information in Keyhole Markup Language (KML) format.		
83.	Ability to offer built-in map data backup and restore for both map background and layers of entities.		
84.	It shall be possible to monitor the state of entities on the map. It shall be possible to customize the icons of any entities represented on the map.		
85.	It shall be possible to select a location by drawing a zone of interest on the GIS MAP, and to display all the entities that are part of that zone of interest at once.		
86.	The user shall be able to select and display the content of multiple TCCC entities on the map in popup windows.		
87.	The GIS MAP shall provide the following search capabilities: <ul style="list-style-type: none"> Search within the map by entity name, street name, or point of interest. Drag and drop entities from the TCCC to the map to center their location.		
88.	Map to support event-based response actions for decision making in case of any emergency / critical situation		
89.	CCTV feeds to be viewed on the Map in case of any event triggers		
90.	The GIS should be able to Click, Select and Control the Variable Sign boards from Single platform in TCCC.		
91.	The GIS Maps should provide Travel Time and Visualization of Traffic in simple and interactive format from the Sensor Data and Data Ingested from 3rd party sources, providing the operators an ease to use platform and execute dynamic messaging across the city through the sign boards as one of the sources for keeping the citizen updated dynamically.		
92.	PA System		
93.	IP Public Address Module in TCCC, shall enable an operator to remotely address people and deter unwanted activity. The IP loudspeaker can also play a pre-recorded audio file when it is manually or automatically triggered in response to an alarm event. With Voice over IP (VoIP) telephony systems that use SIP (Session Initiation Protocol).		

2.20 Application Security and protection Solution

Functional requirements : The software and application based solution should be capable of collecting all probable risk pertaining to any issue.

2.21 Cloud Management System

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Make		
	Model		
1.	Server sizing shall be done considering all the applications and quantities of cameras as per RFP.		
2.	All security related applications like firewall shall be part of Cloud offering		
3.	Data from the cloud shall be accessible whenever required.		
4.	Router, Network and backup shall be provided as per RFP and SLA.		
5.	The service offered by Cloud offered by IA shall include video recording, storage, remote viewing, management alerts, cyber security and more. Cloud technology shall have advances and greater bandwidth availability.		
6.	The capabilities available over the cloud network shall be accessed through standard mechanisms using thin or thick clients, such as mobile phones, tablets, laptops, and workstations.		
7.	Capabilities available on the cloud services offered by IA shall be elastically provisioned and released, it shall be automatically scalable rapidly outward and inward commensurate with demand.		
8.	Cloud systems automatically shall control and optimize resource use by leveraging a metering capability appropriate to the type of service. Resource usage shall be monitored, controlled, and reported, providing transparency.		
9.	A cloud-based system shall have on-demand deployment feature. Plug- in through on-premise bridge appliance and can auto-configure cameras and change settings.		
10.	Considering compute-heavy hardware and software 'in the cloud', on-site bridge appliance to connect the cameras to the cloud-based VMS shall be available, the ongoing support shall be done off-site by the IA		
11.	Advanced cloud systems shall be offered with flexible combination of on-premise and cloud storage. System shall get smooth access regardless of where the video is viewed or stored. IA to ensure camera talks directly to the cloud and store video.		
12.	Cloud shall feature instantly increased resolution or retention period, without having to modify your existing hardware.		
13.	Creation and control for all applications pertaining to NOIDA ITMS project should be in full control of NOIDA. The bidder should		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	provision workloads on nodes which are not shared with any other client/s / customer/s using the services of same CSP to maintain high level of confidentiality.		
14.	Cloud management system shall support auto scaling of hardware sizing, various applications, storage, Virtual machines and nodes related to network on demand basis to cater peak load requirements.		

2.22 Video Analytics System

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Make		
	Model		
1.	Developed preferably on Open source platform		
2.	Scalable to cater the future needs of city		
3.	Capable of integrating with all components of smart city and surveillance system		
4.	Should be able to seamlessly receive and export data to TCCC.		
5.	Capable of integrating and using analytics solutions with any Challan system, Vahaan and Sarthi database, other traffic related applications, VMS or TCCC etc.		
6.	Should be capable of performing on any hardware infrastructure, and should not be restricted to a limited number of makes and models		
7.	Should have modular, transparent and open architecture		
8.	Should be flexible to the deployment of applications on video sources, and be able to support any of the applications available on any of their cameras as and when needed		
9.	Platform should be able to run any single application on any number of video sources/ cameras, run any number of applications on a single video source/camera, add new cameras/ video sources and add new hardware resources (viz. servers, storage devices, etc.)		
10.	Platform should provide developers SDKs and tools for the development of newer applications including training and benchmarking tools that may help in training existing AI models as well as comparing the performance of their models with other standard models		
11.	The architecture should clearly demonstrate the technology stack with layers of the core OS, data governance and interface to different applications.		
12.	Should support user with a hierarchical access level, with different access level for different users demarcated with respect to cameras, apps and the data.		
13.	The user access control system should allow setting of SOP's like Create, Read, Update and Delete operations for each user		

S. No.	Description	Compliance (Y/N)	Documentation Reference
14.	The system should allow deployment of any use case on any camera without any MAC level or IP level locking. Any application / use case should be deployable and redeploy on any camera or video source as far as the camera view supports such use cases for deployment.		
15.	Should be a real-time video analytics engine to utilize advanced image processing algorithms to turn video into actionable intelligence. The system should be compatible with all ONVIF compliant IP cameras		
16.	Should be capable of deploying over cloud (public or private)		
17.	Should also support third-party developed algorithms and use-cases that can provide the user with a large base of use-cases to choose from.		
18.	Should be fully compatible with popular Computer Vision and Artificial Intelligence frameworks such as OpenCV, OpenVINO, Tensorflow, Caffe, Keras and Darknet.		
19.	Should allow seamless training by labelling any objects within the images and providing them suitable attributes of multiple types such as class, subclass, colour, type etc.		
20.	Should have an inbuilt annotation tool that allows a user to label the images with relevant information using both rectangle and polygon drawing facilities.		
21.	Should be able to use algorithms and unsupervised deep learning methods to provide alerts and useful actionable insights from live streaming video feed data. System shall have capability to automatically analyse hours of video data for defining own rule.		
22.	Should have self-learning capabilities. The solution should learn what normal behaviour is for people, vehicles, machines, etc. and the environment based on its own observation of patterns of various characteristics such as size, speed, reflectivity, colour, grouping, vertical or horizontal orientation etc.		
23.	System should allow key UI screens like Event notifications, AI training tool and App camera grid		
24.	Should allow web-based interface and live video interface		
25.	Should allow multiple users to log in at the same time and receive real-time alerts and notifications.		
26.	Should allow each application to be uniquely configured for every individual camera stream, with parameters for camera calibration, image quality improvement, night/day settings etc.		
27.	The app should be able to run on different cameras with different settings (e.g., different Zones for Intrusion, different lines for line crossing detection, etc.) at different hours of the day.		
28.	Should allow various filtering and retrieval of vents based on time, location and attribute etc.		

2.23 Emergency Call Box

S. No.	Technical Specification	Compliance (Yes/No)	Deviations (If any)
	Make		
	Model		
1.	A high-quality digital transceiver, to be placed at certain key locations determined by Department		
2.	Easily accessible by public and user-friendly		
3.	The unit shall preferably have a single button which when pressed, shall connect to the Integrated Command and Control Centre.		
4.	The system shall be integrated to the CCC to provide status of Call of the ECB		
5.	At some locations, ECB can be also used for Public Address		
6.	These shall be installed at selected locations such as Traffic Junctions, Strategic locations, and pedestals or within the vicinity of constant supervision to avoid misuse and vandalism of the call box.		

2.24 Public Address System

S. No.	Technical Specification	Compliance (Yes/No)	Deviations (If any)
	Make :		
	Model :		
1.	Public Address system shall be used at intersections, public places, market places or those critical locations as identified by NOIDA to make important announcements for the public. It shall be able to broadcast messages across all PA systems or specific announcement could be made to a particular location supporting single zone /multi zone operations 1:1 and 1:N		
2.	The system shall also deliver pre-recorded messages to the loud speakers attached to them for public announcements. The system shall contain an IP based amplifier that could drive the speakers. The system shall also contain the control software that could be used to control/monitor all the components of the system that includes Controller, Calling Station & keypad, Amplifier.		
3.	The system shall be integrated to the TCCC to provide status of Call of the Individual PA		
4.	The IA shall describe in detail the design, operational and physical requirements of the proposed public		

S. No.	Technical Specification	Compliance (Yes/No)	Deviations (If any)
	Make :		
	Model :		
	announcement system to demonstrate compliance with all the specified requirements of RFP.		

2.25 Enterprise Management System (EMS)

S. No.	Technical Specification	Compliance (Yes/No)	Deviations (If any)
	Make :		
	Model :		
1.	To ensure that ICT systems are delivered at the performance level envisaged, it is important that an effective monitoring and management system be put in place. It is thus proposed that a proven Enterprise Management System (EMS) is proposed by the bidder for efficient management of the system, reporting, SLA monitoring and resolution of issues. Various key components of the EMS to be implemented as part of this engagement are – <ul style="list-style-type: none"> 1. Network Monitoring System 2. Server Monitoring System 3. Helpdesk System 		
2.	The solution should provide a unified web-based console which allows role based access to the users.		

2.26 Network Monitoring System

S. No.	Technical Specification	Compliance (Yes/No)	Deviations (If any)
	Make :		
	Model :		
1.	Solution should provide fault & performance management of the server side infrastructure and should monitor IP\SNMP enabled devices like Routers, Switches, Sensors, etc. Proposed Network Management shall also help monitor key KPI metrics like availability, in order to		

S. No.	Technical Specification	Compliance (Yes/No)	Deviations (If any)
	Make :		
	Model :		
	<p>measure SLA's. Following are key functionalities that are required which will assist administrators to monitor network faults & performance degradations in order to reduce downtimes, increase availability and take proactive actions to remediate & restore network services.</p> <p>The activities shall include:</p> <ol style="list-style-type: none"> 1. MSI shall provide services for management of ICCC Project to maintain performance at optimum levels on a 24 x 7 basis. 2. MSI shall monitor and administer the network. 3. MSI shall create and modify VLAN, assignment of ports to appropriate applications and segmentation of traffic. 4. MSI shall carry out break fix maintenance of the LAN cabling or maintenance work requiring civil work. 		
2.	The proposed solution must automatically discover manageable elements connected to the infrastructure and map the connectivity between them. Solution should provide centralized monitoring console displaying network topology map.		
3.	Proposed solution should provide customizable reporting interface to create custom reports for collected data		
4.	The system must use advanced root-cause analysis techniques and policy-based condition correlation technology (at network level) for comprehensive analysis of infrastructure faults		
5.	The system should be able to clearly identify configuration changes and administrators should receive an alert in such cases.		
6.	The solution should support multicast protocols too, if the overall project solution offered includes multicast.		

2.27 Server Performance Monitoring System;

S. No.	Technical Specification	Compliance (Yes/No)	Deviations (If any)
	Make :		
	Model :		
1.	The proposed tool should integrate with network performance management system and support operating system monitoring for various platforms supplied as part of this Project.		
2.	The proposed tool must provide information about availability and performance for target server nodes.		
3.	The proposed tool should be able to monitor various operating system parameters such as processors, memory, files, processes, file systems, etc. where applicable.		

2.28 Helpdesk system:

S. No.	Technical Specification	Compliance (Yes/No)	Deviations (If any)
	Make :		
	Model :		
1.	Helpdesk system should provide incident management, problem management templates along with helpdesk SLA system for tracking SLA's pertaining to incident resolution time for priority / non-priority incidents.		
2.	System should also automatically create tickets based on alarm type.		
3.	The proposed helpdesk solution must provide flexibility of logging, viewing, updating and closing incident via web interface for issues related to the project.		
4.	IT Asset database should be built and managed by the bidder, in order to carry out the scope of work items.		

3 Technical Requirement Specification

3.1 Traffic Signal Controller

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Make		
	Model		
1.	Technical Specifications <ul style="list-style-type: none"> a) Power supply: 230 V AC at 50 Hz or 24 VDC operated b) The Traffic Signal Controller equipment should be 32/64 bit micro controller solid state traffic signal lamp switching module c) Real time clock with facility to update from central server (accurate to plus or minus 100 milli seconds) d) Signal head compatibility: LED 230VAC or 24VDC with dimming of various intensity levels e) 32bit, ARM Cortex –A8 / 100MHz processor or advanced micro controller f) 2 MB or more flash as nonvolatile storage, 256 KB or more as RAM, with a provision of adding minimum 32 GB through an external SD Card/USB. g) Controller clock frequency of min of 100MHz. h) Junction Off Switch i) Stages- The controller shall have facility to configure 16 stages. j) The controller shall have facility to configure 10 cycle plans and the Amber flashing / red flashing plan 		
2.	The Traffic Signal Controller equipment should be 32/64 bit micro controller solid state traffic signal lamp switching module with the ability to program any combination of traffic signal stages, phases, and junction groups with conflict monitoring facility.		
3.	The Traffic Signal Controller shall have conflict monitoring facility to ensure that conflicting, dangerous triggers are pre-flagged at the programming stage are disallowed even during manual override phase.		
4.	The Traffic Signal Controller shall have real time clock with facility to update from central server (accurate to plus or minus 100		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	milliseconds) i.e. ITMS server GPS and through manual entry.		
5.	Signal head compatibility: LED 230VAC or 24VDC with dimming of various intensity levels. The system should be capable to achieve any levels of dimming		
6.	Power supply: 230 V AC at 50 Hz or 24 VDC operated		
7.	Standards compliance: EN 50556/AS/NZS ISO 9001:1994 for design & servicing. and EN 12675/IEC 60068 for functional safety, EN 55024:2010 & AS/NZS 60950/BS EN 61000-3-3 or equivalent for voltage fluctuations, or equivalent		
8.	Safety level SIL3 or equivalent / NTCIP Communication Protocol / OCIT / UG405 (UK standard)/TCP-IP		
9.	Number of signal groups: minimum 24 or as per site requirement		
10.	Number of signal head outputs: minimum 72 or as required		
11.	Number of signal plans: Upto 10 in fixed time and unlimited in ATCS mode		
12.	Number of stages in signal plans: minimum 16 using major and macro stages.		
13.	Number of detector inputs: min 16		
14.	Interfaces: Ethernet, RS232, USB, 3G/4G		
15.	Real time clock with facility to update from central server (accurate to plus or minus 100 milli seconds)		
16.	Signal head compatibility: LED 230VAC or 24VDC with dimming of various intensity levels		
17.	32bit, ARM Cortex –A8 or advanced micro controller		
18.	Non- Volatile memory device (flash memory) easily programmable through keypad or laptop. Minimum of 512 KB flash memory and 128 KB RAM)		
19.	Controller clock frequency of min of 100MHz.		
20.	Junction Off Switch		
21.	Stages- The controller shall have facility to configure minimum 16 stages using major and macro stages		
22.	Temperature range: 0 – 60 deg. C or better		
23.	Humidity: 95% without condensation		
	Traffic Light Aspects		
24.	It shall have less power consumption for all colours, preferably maximum power should not exceed 14 watts for each colour.		
25.	Shall preferably have temperature		

S. No.	Description	Compliance (Y/N)	Documentation Reference
	compensated power supplies for longer LED life.		
26.	Shall have uniform appearance light diffusing.		
27.	All units operate at voltage of - 12 / 24 VDC / 230VAC.		
28.	LED shall be single source narrow beam type with clear lens & Luminance uniformity.		
29.	IP Rating: IP65		
	LED aspects		
30.	Red, Amber, Green-Full (300 mm diameter) : HiBrite		
31.	Green-arrow (300 mm diameter): HiBrite		
32.	Red, Green – Vehicular and pedestrian (300 mm diameter): HiBrite		
33.	Pedestrian-Red and Green		
34.	Countdown timer (300 mm)		
35.	Certification: EN-12368 certified with Hi-Brite		
	LED Retrofit Specifications		
36.	Power supply shall be preferably 230 Vac +/- 10% and frequency 50+/-5Hz		
37.	Standards: EN 12368 certified		
38.	Convex Tinted Lens / Water Clear Lens, Fuse and Transients shall be available		
39.	Operating Temperature Range: As per NOIDA weather conditions Turn Off/Turn On Time: 75 milli seconds max		
40.	Total Harmonic Distortion <10% in case of input voltage of 230 V AC		
41.	Minimum Luminous Intensity (measured at intensity point)(cd): Red 400, Amber 400, Green 400		
42.	Dominant Wavelength (nm): Red 630, Amber 590, Green 490		
43.	Lamp conflict compatibility system: Compatible with lamp failure and conflict detection		

3.2 Cables for Traffic Signals integration

S. No.	Parameters	Minimum Specifications
1	Nos of core	As per design requirements
2	Materials	As per design requirements
3	Certification	ISI Marked
4	Standards	Indian Electricity Act and Rules
5	IS:1554	PVC insulated electric cables (heavy duty)

3.3 ANPR Camera without embedded LPU

Bidder quoting ANPR Cameras without Embedded LPU shall comply to below specification

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Make		
	Model		
	Camera Specifications - ANPR Camera		
	Parameters	Minimum Specifications	
1.	Video Compression	H.264,H.265 / H.265+ or better	
2.	Video Resolution	2 MP or better (1920x1080)	
3.	Frame rate	Min. 25 FPS	
4.	Image Sensor	1/ 2.8" Progressive Scan CCD / CMOS	
5.	Lens Type	Varifocal, C/CS Mount, IR Correction full HD lens	
6.	Shutter Speed	1/5 – 1/10,000 (25 fps / 1 input)	
7.	Lens	5~50mm or suitable lenses to capture minimum 3.5 meters lane width from a minimum height of 6.5 meters.	
8.	IR Cut Filter	Automatically Removable IR-cut filter	
9.	Day/Night Mode	Colour, Mono, Auto	
10.	Region of Interest	4 zones (ON/OFF)	
11.	S/N Ratio	≥ 50 Db	
12.	WDR	120 dB	
13.	RAM/ ROM	256 MB/ 32 MB	
14.	Stream	H.264, H.265 / H.265+ Triple& Individual Configurable, At least 1 stream at 2MP @ 25FPS	
15.	Streaming Method	Unicast, Multicast	
16.	Auto adjustment + Remote Control of Image settings	Colour, Brightness, sharpness, contrast, white balance, exposure control, backlight compensation, Gain Control, True Wide Dynamic Range	
17.	Local storage	Minimum 128 GB Memory card in a Memory card in the camera slot. In the event of failure of connectivity to the central server the camera shall record video locally on the SD card automatically to storage video at 2MP, 25 fps for minimum 7 days. After the connectivity is restored these recordings shall be automatically merged with the server recording such that no manual intervention is required to transfer the SD card-based recordings to server.	
18.	Protocol	IPv4, IGMP, ICMP, TCP, UDP, DHCP, PPPoE, RTP, RTSP, RTCP, DNS, DDNS, NTP, FTP, ONVIF, HTTP, HTTPS, SMTP, 802.1x, SNMP, QoS	

S. No.	Description	Compliance (Y/N)	Documentation Reference
19.	Security	Password Protection, IP Address filtering, User Access Log, HTTPS Encryption	
20.	Operating conditions	As per NOIDA weather conditions	
21.	Casing	NEMA 4X / NEMA TS2 / IP-66 and IK10 rated or better	
22.	Intelligent Video	Motion Detection & Tampering alert	
23.	Alarm I/O	Minimum 1 Input and 1 Output contact for 3rd party integration	
24.	Video Interface	1 port (BNC) / Ethernet 1Vp-p, 75 Ohm	
25.	Certification	UL/EN, CE, FCC, BIS, ONVIF	
26.	ONVIF Compliance	The camera should be ONVIF Profile S & G Conformant for both present & future generation cameras of OEM	

3.4 ANPR Camera with Embedded LPU

Bidder quoting ANPR Cameras with Embedded LPU shall comply to below specification

S. No.	Description	Compliance (Y/N)	Documentation Reference
	Make		
	Model		
	Camera Specifications - ANPR Camera with Embedded LPU		
	Parameters	Minimum Specifications	
27.	Video Compression	H.264, H.265 / H.265+ or better	
28.	Video Resolution	2 MP or better (1920x1080)	
29.	Frame rate	25 Frames per second or better	
30.	Image Sensor	1/ 3" Progressive Scan CCD / CMOS	
31.	Lens Type	Varifocal, C/CS Mount, IR Correction full HD lens	
32.	Shutter Speed	1/525 and 1/25000 or better with Global Shutter speed	
33.	Lens	IR Corrected lens suitable to one lane (3.5M) from height up to 6.5Mtrs and should be pure Megapixel or better.	
34.	IR Cut Filter	0lux with IR Pulsed LED illuminator for effective use in 0 lux (total darkness) environments with different wave-length's being made available for better performance in Noida conditions.	
35.	Day/Night Mode	Colour, Mono, Auto	
36.	Region of Interest	4 zones (ON/OFF)	
37.	S/N Ratio	≥ 50 Db	
38.	WDR	120 dB	
39.	RAM/ ROM	2 GB/ minimum 16GB for OS, Windows 10 or better	
40.	Stream	At least 1 stream at 2MP @ 25 FPS	

S. No.	Description	Compliance (Y/N)	Documentation Reference
41.	Streaming Method	Unicast	
42.	Auto adjustment + Remote Control of Image settings	Compression, white balance, exposure control.	
43.	Local storage	Must be able to store minimum 70000 or 7 days reads at the onboard storage in case of network failure.	
44.	Protocol	10/100 Tx, 802.3af PoE , IPv4/v6, DHCP, RTP, RSTP, HTTP.	
45.	Security	Password Protection, IP Address filtering, User Access Log, HTTPS Encryption	
46.	Operating conditions	As per NOIDA weather conditions	
47.	Casing	Vandal resistant with IP66 and IK 10 or better	
48.	Intelligent Video	Average Speed Detection Motion Detection, Direction of travel & Virtual loop.	
49.	Alarm I/O	Minimum 1 Input & 1 Output contact for 3rd party integration	
50.	Video Interface	Ethernet	
51.	Certification	FCC part 15 Subpart B, UL, NEMA - TS2, BIS/CE and MIL - STD	

3.5 Adaptive Countdown Timer

S. No.	Parameter	Minimum Specification	Compliance (Y/N)	Documentation Reference
	Make			
	Model			
	Countdown Timer			
1	CPU	Micro Controller		
2	Mechanical Specifications			
	Structural Material	Polycarbonate or Non-Corrosive Material strengthened against UV rays. Square shaped for correct digit display.		
	Body Color	Light Grey/Black		
	Dimensions	Preferably 360mm x 370mm x 220mm (or better)		
3	Display Specification			
	Lamp Diameter	Minimum 320x320mm display (Square shaped)		
	Digit Height	Minimum 150 -165mm		
	Display Type	Dual Coloured (Red & Green)		
	No. of Digit	Minimum 2 ½ or better		
4	LED Specifications			
	LED Diameter	Minimum 5mm LED		

	Viewing Angle	Minimum 30°		
	LED Wave Length	Preferably 630-640nm (Red), 505nm - 520nm (Blue-Green)		
5	Technical Features			
	Power Consumption	Preferably 20 - 30 Watt Per Lamp		
	Input Power	12/24V DC or 230V AC ~ 50Hz		
	Operating Temperature	As per NOIDA weather conditions		
	Humidity	As per NOIDA weather Conditions		
	Water & Dust Ingress	IP 65		
	Standard	EN12966 Compliant		

3.6 Speed Violation Detection System

The system should be capable of generating a video & minimum 3 snapshot in any of the standard industry formats (MJPEG, JPG, avi, mp4, mov, etc) with at least 10 frames per second. The system should have proper TEST REPORTS & CERTIFICATIONS with OEM. The Test reports should be in accordance with vehicle Speed violation act / law so as to make sure that systems are properly tested.

S. No.	Description		Compliance (Y/N)	Documentation Reference
	Make			
	Model			
	Camera Specifications – Speed Violation Detection			
	Parameters	Minimum Specifications		
1.	Video Compression	H.264/ H.265 / H.265+ or better		
2.	Video Resolution	2 MP (1920 X 1080) or better		
3.	Frame rate	Min. 25 FPS		
4.	Image Sensor	1/2.8" Progressive Scan CCD / CMOS		
5.	Lens Type	Varifocal, C/CS Mount, IR Correction full HD lens		
6.	Shutter Speed	1/5 - 1/10,000 (25 fps / 1 input) or better		
7.	Lens	5~50mm or better		
8.	IR Cut Filter	Automatically Removable IR-cut filter		
9.	Day/Night Mode	Colour, Mono, Auto		
10.	S/N Ratio	≥ 50 Db		
11.	WDR	90 dB		
12.	Stream	H.264/ H.265 / H.265+ Triple & Individual Configurable, At least 1 stream at 2MP @ 25FPS or better		
13.	Streaming Method	Unicast, Multicast		

S. No.	Description	Compliance (Y/N)	Documentation Reference
14.	Auto adjustment + Remote Control of Image settings	Color, Brightness, sharpness, contrast, white balance, exposure control, Gain Control.	
15.	Local storage	Minimum 128 GB Memory card in a Memory card in the camera slot. In the event of failure of connectivity to the central server the camera shall record video locally on the SD card automatically to storage video at 2MP, 25 fps for minimum 7 days. After the connectivity is restored these recordings shall be automatically merged with the server recording such that no manual intervention is required to transfer the SD card-based recordings to server.	
16.	Protocol	IPv4, IGMP, ICMP, ARP, TCP, UDP, DHCP, PPPoE, RTP, RTSP, RTCP, DNS, DDNS, NTP, FTP, UPnP, HTTP, HTTPS, SMTP, 802.1x, SNMP, QoS	
17.	Security	Password Protection, IP Address filtering, UserAccess Log, HTTPS Encryption	
18.	Operating conditions	As per NOIDA weather conditions	
19.	Casing	NEMA 4X / NEMA TS2 / IP-66 and IK10 rated or better	
20.	Intelligent Video	Motion Detection & Tampering alert	
21.	Alarm I/O	Minimum 1 (imp) / 2 Input & 1 Output contact for 3rd party	
22.	Certification & compliance for cameras based system (as Applicable)	UL/EN, CE, FCC, BIS, ONVIF	

3.7 PTZ Cameras

S. No.	Parameters	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
	Make			
	Model			
1	Video Compression	H.264, H.265 / H.265+ or better		
2	Video Resolution	2 MP (1920 X 1080) or better		
3	Frame rate	25 FPS at all resolutions.		

S. No.	Parameters	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
4	Image Sensor	SL (4) Image Sensor: 1/2.8" or 1/3" or better Progressive Scan CCD / CMOS or better		
5	Lens	Auto-focus / P Iris, Vari-focal lens range between 4.5 mm \pm 0.2 mm to 135 mm \pm 6 mm / 30x) or better		
6	Minimum Illumination	Colour: 0.05 Lux or better B/W: 0.01 lux or better (at 30 IRE)		
7	Day/Night Mode	Color, Mono, Auto		
8	S/N Ratio	\geq 50Db		
9	PTZ	Pan: 360° endless/continuous, 9 to 240°/s(auto), 0.1to 190°/s (Manual);		
		Tilt: 90°, 7 to 120°/s (Auto), 0.2 to 120°/s (Manual), 30x optical zoom and 10x digital zoom 256preset positions Auto-Tracking Pre-set tour		
10	Auto adjustment +Remote Control of Image settings	Colour, Brightness, Sharpness, Contrast, White balance, exposure control, backlight compensation, Gain Control, Wide Dynamic Range, EIS, ROI, Defog		
11	Protocol	IPv4, IGMP, ICMP, ARP, TCP, UDP, DHCP, PPPoE, RTP, RTSP, RTCP, DNS, DDNS, NTP, FTP, UPnP, HTTP, HTTPS, SMTP, 802.1x, SNMP, QoS		
12	Security	Password Protection, IP Address filtering, User Access Log, HTTPS encryption		
13	Tamper protection	Shall have tamper detection and alert.		
13	WDR	120 dB		
14	RAM/ ROM	256 MB/ 32 MB		
15	Stream	H.264,H.265 / H.265+ Triple & Individual Configurable, At least 1 stream at 2MP @ 25FPS		
16	Streaming Method	Unicast, Multicast		
17	Casing	NEMA 4X/IP67/66 and IK10 Built in Heater and Blower for smart / Automatic temperature control		
18	Operating conditions	As per Noida weather conditions		
19	Certification	UL/EN, CE, FCC, BIS, ONVIF		

S. No.	Parameters	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
	ONVIF Compliance	The camera should be ONVIF Profile S & G Conformant for both present & future generation cameras of OEM		
20	Local storage	Minimum 128 GB Memory card in a Memory card in the camera slot. In the event of failure of connectivity to the central server the camera shall record video locally on the SD card automatically to storage video at 2MP, 25 fps for minimum 7 days. After the connectivity is restored these recordings shall be automatically merged with the server recording such that no manual intervention is required to transfer the SD card-based recordings to server.		
21	Video Interface	Ethernet (RJ 45)		
22	Alarm I/O	Input –1 Input & 1 Output for 3 rd party interface		
23	IR	Internal IR range should be 150mtr or better. IR intensity should be auto-adjustable as per zoom ratio		
24	Audio	Two-way Audio 1In/1Out		
25	Camera hardware life	10 years		

3.8 Fixed Box/Bullet Cameras

Sr. No.	Parameters	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
	Make			
	Model			
	Parameters	Minimum Specifications		
1.	Video Compression	H.264, H.265 / H.265+		
2.	Video Resolution	2 MP or better		
3.	Frame rate	25 FPS at all resolutions		
4.	Image Sensor	½.8" Progressive Scan CCD / CMOS		
5.	Lens Type	Varifocal, C/CS Mount, IR Correction full HD lens		
6.	Shutter Speed	1/5 - 1/10,000 or better		

Sr. No.	Parameters	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
7.	Lens	2.8-12 mm / 5-50 mm or better (as required)		
8.	IR Cut Filter	Automatically Removable IR-cut filter		
9.	Day/Night Mode	Colour, Mono, Auto		
10.	Region of Interest	4 zones (ON/OFF)		
11.	S/N Ratio	≥ 50 Db		
12.	WDR	120 dB		
13.	RAM/ ROM	512 MB/ 32 MB		
14.	Stream	H.264, H.265 / H.265+ Triple & Individual Configurable, At least 1 stream at 2MP @ 25 FPS		
15.	Streaming Method	Unicast, Multicast		
16.	Auto adjustment + Remote Control of Image settings	Colour, Brightness, sharpness, contrast, whitebalance, exposure control, backlight compensation, Gain Control, True Wide Dynamic Range		
17.	Local storage	Minimum 128 GB Memory card in a Memory card in the camera slot. In the event of failure of connectivity to the central server the camera shall record video locally on the SD card automatically to storage video at 2MP, 25 fps for minimum 7 days. After the connectivity is restored these recordings shall be automatically merged with the server recording such that no manual intervention is required to transfer the SD card-based recordings to server.		
18.	Protocol	IPv4, IGMP, ICMP, ARP, TCP, UDP, DHCP, PPPoE, RTP, RTSP, RTCP, DNS, DDNS, NTP, FTP, UPnP, HTTP, HTTPS, SMTP, 802.1x, SNMP, QoS		
19.	Security	Password Protection, IP Address filtering, User Access Log, HTTPS Encryption		
20.	Operating conditions	As per NOIDA weather conditions		
21.	Casing	NEMA 4X / IP-67/ IK10 rated		
22.	Intelligent	Motion Detection & Tampering		

Sr. No.	Parameters	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
	Video	alert		
23.	Alarm I/O	Minimum 1 Input& 1 Output contact for 3rd party		
24.	Video Interface	Ethernet (RJ 45)		
25.	IR Illuminator	Internal / External–40 mtrs or better, 850nm intensity.		
26.	Certification	UL, EN, CE, FCC, BIS		
27.	ONVIF	The camera should be ONVIF Profile S & G Conformant for both present & future generation cameras of OEM		
28.	Audio	Two-way Audio 1 In /1Out		
29.	Cameras Hardware life	10 years		

3.9 Public Address System

S. No.	Parameter	Technical Specification	Compliance (Yes/No)	Deviations (If any)
	Make			
	Model			

S. No.	Parameter	Technical Specification	Compliance (Yes/No)	Deviations (If any)
	Make			
	Model			
1.	PAS system	Should have the capability to control individual PAS i.e. to make an announcement at select location (1:1) and all locations (1: many) simultaneously. The PAS should also support both, Live and Recorded inputs		
2.	Outdoor Speaker	Minimum 4 Speakers 30 W capacity		
3.	Frequency response	Speaker 350 -10,000Hz		
4.	Line Monitoring	Line Monitoring Facility for speakers		
5.	Connectivity	Native IP connectivity, no convertors to be used		
6.	Amplifier	IP amplifier with minimum 250 Watts, Class D. Redundant power supply provision inbuilt in Amplifier, Main power supply: 100 – 240 VAC, backup power supply 24 VDC		
7.	Frequency Response	50Hzto 15000 Hz for Amplifier		
8.	Access Control	Access control mechanism would be also required to establish so that the usage is regulated.		
9.	Relay Contacts	2 Inputs and 1 Output relay contacts in Amplifier		
10.	Integration	With VMS and Command and Control Center or any other component if required		
11.	Controller	PA Master Controller to have facility for multiple mic inputs, direct dialling buttons, LCD screen		
12.	Protocols	IPv6,IPv4, TCP, UDP, HTTP (RFC 2617, RFC 3310), RTP (RFC 3550), RTCP, DHCP, SDP (RFC 2327), SIP (RFC 3261), SNMPv2, STUN, TFTP, URI (RFC 2396), DTMF Decoding (RFC 2876, RFC 2833), SIP User Agent (UDP RFC 3261), SIP Refer Method (RFC 3515)		
13.	Construction	Cast Iron Foundation and M.S. Pole, Sturdy Body for equipment		
14.	Battery	Internal Battery with different charging options (Solar/Mains)		
15.	Power	Automatic on/off operation		
16.	Casing	IP-55 rated for housing for Amplifier		
17.	Operating conditions	0 to +55 deg. C Temperature rating for Amplifier and control desk		
18.	Software (Central)	Central Software based server application capable of working on virtual environment/cloud with 100% redundancy for DC & DR		

S. No.	Parameter	Technical Specification	Compliance (Yes/No)	Deviations (If any)
	Make			
	Model			
19.	Software (Client)	Software Client for making Calls to PA and ECB		
20.	Volume Control	Automatic Volume Control, Call recording		
21.	Transmission Bandwidth	16000 KHz		

3.10 Emergency Call Box

S. No.	Technical Specification	Compliance (Yes/No)	Deviations (If any)
	Make		
	Model		
1. #	Call Button: Watertight, Push Button, Visual Feedback for button press and call indication with acoustic hood to filter background noise		
2. #	Connectivity: Ethernet		
3. #	Sensors: For tempering/ vandalism		
4. #	IP66, IK09 Protection		
5. #	Operating Temperature 0 to 70 C		
6. #	Speaking Distance minimum 5 ft		
7. #	Inbuilt Class D Amplifier, 99db SPL		
8. #	Minimum 3 Inputs and 2 Output relay contacts		
9. #	ECB should be able to make calls to the PA system		
Control Center Room (CCR) Equipment			
10	Central Software based server application capable of working on virtual environment/cloud with 100% redundancy		
11	Access control mechanism would be also required to establish so that the usage is regulated		
12	Integration with VMS and Command and control centre or any other component if required		
13	PA Master Controller to have facility for multiple mic inputs, direct dialling buttons, LCD screen		
14	Software Client for making Calls to PA and ECB		
15	Automatic Volume Control and Call recording		
16	Transmission bandwidth 16000 KHz or better		
17	Operating temperature for control desk 0 to +60C		

3.11 Environmental Sensor

Sr. No.	Parameter	Description	Compliance (Y / N)	Relevant Document / Remarks																				
	Make																							
	Model																							
1	Environment Sensors Capability & Measurement Elements	a) They should be ruggedized enough to be deployed in open air areas, on streets and parks b) They should be able to read and report at least the following parameters: Temperature, Humidity, Ambient Light, Sound, UV, Pressure, CO, CO2 NO2, O3, SO2 with compulsorily PM 2.5 and PM 10.																						
2	Measurement component with Measurement range (must measure required ranges)	<table><tr><td>NO2</td><td>0 – 220 ppb</td></tr><tr><td>O3</td><td>0 – 390 ppb</td></tr><tr><td>SO2</td><td>0 – 630 ppb</td></tr><tr><td>CO</td><td>0 – 31 ppm</td></tr><tr><td>CO2</td><td>0 - 5000ppm</td></tr><tr><td>PM 2.5</td><td>0 to 250 micro gms/cu.m</td></tr><tr><td>PM 10</td><td>0 to 450 micro gms/cu.m</td></tr><tr><td>Light</td><td>up to 10,000 Lux</td></tr><tr><td>Noise</td><td>up to 100 dB (A)</td></tr><tr><td>UV</td><td>1 to 15 UVI</td></tr></table>	NO2	0 – 220 ppb	O3	0 – 390 ppb	SO2	0 – 630 ppb	CO	0 – 31 ppm	CO2	0 - 5000ppm	PM 2.5	0 to 250 micro gms/cu.m	PM 10	0 to 450 micro gms/cu.m	Light	up to 10,000 Lux	Noise	up to 100 dB (A)	UV	1 to 15 UVI		
NO2	0 – 220 ppb																							
O3	0 – 390 ppb																							
SO2	0 – 630 ppb																							
CO	0 – 31 ppm																							
CO2	0 - 5000ppm																							
PM 2.5	0 to 250 micro gms/cu.m																							
PM 10	0 to 450 micro gms/cu.m																							
Light	up to 10,000 Lux																							
Noise	up to 100 dB (A)																							
UV	1 to 15 UVI																							
3	Temperature, Pressure and Humidity Sensor	Real-time Temperature Range: outdoor 0°C ~ 50°C Real-time in Air Humidity Level Display Real-Time Pressure Display (in Bars or millibars)																						
4	Connectivity (Minimum)	Wi-Fi, Ethernet or GSM																						
5	Software and Data backup	Backup measurement data for minimum 5 days in case of network failure or system maintenance cycles																						
6	Mechanical Enclosure	Single enclosure with all components inside or simplified mounting and should be Compliant as per IP-64 standards.																						
7	Data validity and stabilization	Sensors must ensure data of sensors is valid and not require stabilization times in case of power outages less than 5 hours.																						
8	Environment Sensor System Processor	The Environmental Monitoring System should be certified as per CE standards and the system should ensure data security with multi layered security																						
9	Certificates	The Environmental Monitoring System should be certified as per CE,FCC and safety standards complies to UL62368-1, CSA C22.2 and system should ensure data security with multi layered security																						
11	Experience	OEM should have been installed																						

		minimum 20 No's of Environment Sensor in India for a single city-wide project		
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3.12 Variable Message Signboard Display (VMD)

S. No.	Parameters	Minimum Specification	Compliance (Y / N)	Relevant Document / Remarks
	Make			
	Model			
1	Display Size (W x H)	1.Minimum 2.8 m x 1.9m or bigger 2. Minimum 3.8 m x 1.9m or bigger		
2	Pixel Pitch	Minimum 8 mm or better, L2 Class as per EN 12966 / UL 60950-1 anti-glare		
3	LED Configuration	RGB 3 in 1 SMD		
4	Pixel Density	10,000 pixels per sqm or higher		
5	Half Gain Horizontal / Vertical Viewing Angle	H 140 deg / V 90 deg or better		
6	Refresh Rate	>1920 Hz or better		
7	Temp Range	0 to 60 deg C or better		
8	GrayScaleProcessing	15 Bit or better		
9	Brightness (Calibrated)	5500 cd/m ² or better		
10	Maximum Power Consumption	850 w/sqm or lower		
11	Dimming Capability	256 levels		
12	Power Input	100 ~ 240 VAC		
13	Individual Tile/Cabinet Dimensions	960 mm (W) x 960 mm (H) x 141±2 mm (D)		
14	Contrast Ratio	2000:1 or better		
15	Access For Maintenance	Rear		
16	IP Level	Front IP65 / Rear IP54		
17	Experience	The OEM of the Outdoor Direct View VMD should have minimum 2 or more projects in India for 20 Outdoor VMD using SMD technology each installed (similar or bigger size) in India (Government /PSUs) all of which are connected to a single network and controlled centrally with content also being published centrally on all the displays. No LED advertisement display shall be considered. OEM should have supplied VMD.		
18	Certifications EN 12966 / UL 60950-1 (Copy to be submitted along with the bid)	Quality Management System ISO 9001:2015.		

S. No.	Parameters	Minimum Specification	Compliance (Y / N)	Relevant Document / Remarks
19	LED package & Certificate from the LED package vendor to be provided during the supply certifying the same	LED chip or better will be sent to the manufacturer in order to confirm the genuineness of the LED chip used in the LED screen directly by the department		
20	International Safety Certifications (Mandatory to submit along with the bid)	<ul style="list-style-type: none"> BIS Registration (Bureau of Indian Standards) As per Standard: IS 13252(PART 1) :2010 if applicable. Certifications EN 12966/ UL60950-1 (Copy to be submitted along with the bid) 		
21	Power Supply	<ul style="list-style-type: none"> Suitable power distribution to be provided inside the board to handle the led screen. It should be possible to switch the screen on or off from a central location 		

Mechanical Structure for Mounting of Variable Message Display (VMB) System

22	Mounting Structure	VMB should be mounted on unipole cantilever Structure and should be earthed properly and provided with lightning arrestor as well. Drawing to be approved by the department before fabrication and installation. The base of the LED shall be at a height of 6 meter from the ground. Foundation laying is also included in our scope. Structure is to be certified by the structural engineer.		
23	Material	Should be made from mild steel and		

		painted black along with antirust coating.		
Content Management Server with Software for Variable Message Display (VMD) System				
24	Signage & Content Manager (Software & Hardware)	To be able to create playlists and send them over the network to 100 media players or more for playout based on schedule and sequencing. This software to be loaded on suitable hardware to be supplied by the vendor		
25	License support	The software should support management of more than 100 players		
26	Playlist Automation	Flexible scheduling based on day, date and time; Playlist Scheduling;		
27	Content Distribution	Scalable, simultaneous publishing, at least 100 simultaneous subscribers		
28	Content Management	Design simplified user interfaces		

3.13 Command & Control Room Interior

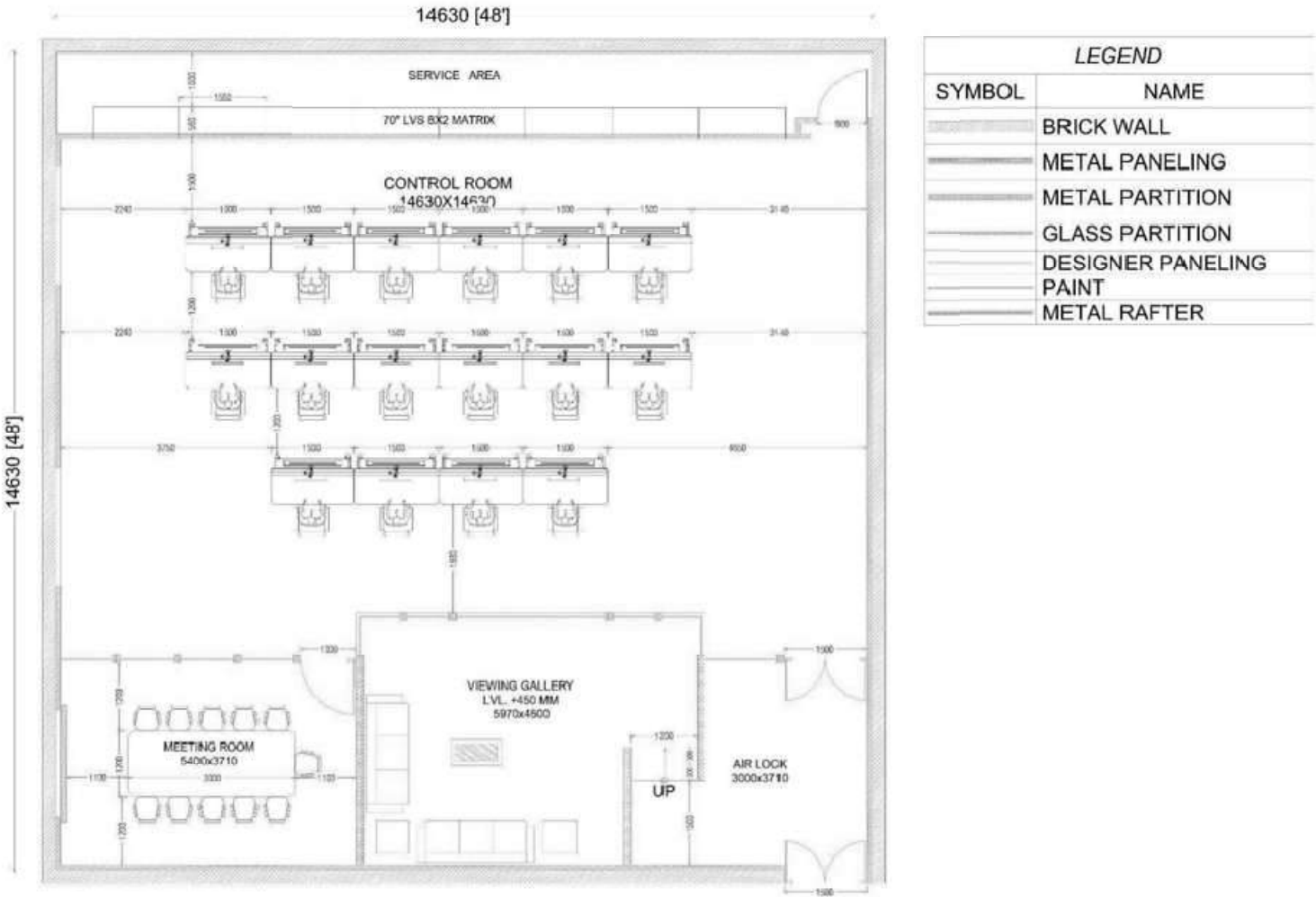
Sl.N o.	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
	Make		
	Model		
1.	Scope of Work: The scope of the project includes designing; engineering, supply & installation of 24X7 mission critical Control Centre Interiors. Being a project of National repute this state-of-the-art facility & all its components like ceiling, flooring, control desk, panelling, Glass partitions, ceiling light & luminaire's electrical etc. shall be treated as a part of one single solution i.e. control room.		
2.	To ensure an integrated solution, to qualify as per the international control room design & safety norms; main bidder shall bring one single professional Control Room Interior Solution Provider on board with an experience of designing, manufacturing and installing at least twenty control rooms interiors with control desks. Corresponding purchase orders / work orders and their appreciation / completion letters to be submitted along with the bid.		
3.	Designing, manufacturing, testing, integration etc., all complete, preparation of the related drawings, documents, etc. of the Control room shall be in the supplier's scope. The Control room design shall confirm the requirements & specifications of this bid document. All the certificates and reports mentioned in specification to be submitted along with the technical Bid.		
4.	The Metal panelling and Metal False Ceiling system must be RoHS certified (from UL/Intertek) to ensure restriction of hazardous substance in any of the materials. Certificate to be submitted along with the Technical Bid.		
5.	The Console OEM must be FSC certified. OEM should have had this certificate for at-least three years prior to April 1st, 2019. Certificate to be submitted along with the technical bid.		

Sl.N o.	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
6.	Metal Panelling & Metal False ceiling shall be Seismic Zone 4 or higher. Tested & certified from approved government authorized test lab, relevant certificate to be submitted along with the Technical Bid.		
7.	The Console OEM should have had Greengard Gold Certificate. OEM must have had this certificate for at-least one year prior to April 1st, 2019. Certificate to be submitted along with the technical bid.		
8.	Load Bearing Capacity - UL Certificate design feature on Load bearing capacity of panelling structure shall have load carrying capacity of 300 Kg to hold any display unit on clamp having minimum length of 750mm. Relevant UL certificate to be submitted along with the Technical Bid.		
9.	Easy Replacement - UL Certified design feature of Modular wall Panelling tile having secure locking arrangement for equidistant mounting. Locking arrangement shall enable easy replacement without using any tool. The feature shall provide easy flexibility of locking all tiles in one column through gravity. Relevant UL Certificate to be submitted along with the Technical Bid.		
10.	Front Edge must have UL Certified design feature of modular PU Edge. High density Poly Urethane Foam moulded on industrial grade aluminium core to form 50mm deep tapered edge to be installed on worktop. The edge shall be mechanically replaceable within 30 minutes in case of damage or wear, without opening or removing the worktop. Valid UL Certificate to be submitted along with the technical bid.		
11.	Acoustic Flooring: - The decorative flooring shall reduce impact sound by 14dB (ISO 717-2). It shall be twin-layer linoleum built up from 2 mm acoustic laminate and 2 mm corkment backing.		
12.	Sound transmission class (STC) value should be 35 for Wall Panelling & Partition (According to IS: 9901 (Part III) – 1981, DIN 52210 Part IV- 1984, ISO: 140(Part III) -1995, relevant test report from reputed agency to be submitted along with the Technical Bid.		
13.	Monitor Arm: - UL certified design feature of monitor arm assembly shall have push & remove feature for quick release of VESA mounts and modular arm extensions for ease in maintenance and fixing of monitor by one technician within 30 seconds without using any tools. Valid UL Certificate to be submitted along with the technical bid.		
14.	UL Certified feature of Modular WallPanelling tile having secure locking arrangement for equidistant mounting. Locking arrangement enables easy replacement without using any tool. The feature shall provide easy flexibility of locking all tiles in one column through gravity. Relevant UL Certificate to be submitted along with the Technical Bid.		
15.	The proposed wall panelling and ceiling tiles should be tested and certified as Class A as per ASTM E84 (from UL/Intertek) for surface spread of flame and smoke generation. This is mandatory to ensure that the materials used in the interiors do not provoke fire. Relevant certificate to be submitted along		

Sl.N o.	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
	with the Technical Bid.		
16.	UL Certified design feature of Monitor Arm Assembly shall have push & add/remove die-cast aluminium extendable arms of 150mm each with tool less addition/deletion feature to cater future requirements. Tool less addition / deletion in less than 30 seconds. Valid UL Certificate to be submitted along with the technical bid.		
17	<p>Supply of integrated cladding and ceiling shall be majority of three components for Main Control Room</p> <p>A. The Panelling and Ceiling shall be material made of Alumina Tri-Hydrate and Acrylic Resins. The surface shall be non-porous, fire-retardant, Water Proof, Scratch resistant and shall have high hardness. All the fasteners shall be hidden and nuts/bolts shall not be visible on the exposed surface. The top finish of material shall be Greengard Certified and shall be homogeneous throughout the depth.</p> <p>B. Stretch Ceiling: The ceiling shall be supplied with demountable translucent stretch ceiling membrane with harpoon, corners ready to install. It should not get discoloured& sag. All joints shall be provided with appropriate interface trims to be able to demount the ceiling to access the lights. The ceiling must be installed using ceiling aluminium suspension system, complete as per manufacturer's installation guidelines and as per approved shop drawings in line with the design intent and approval by Architect/Engineer In-charge approval. LED strips shall be installed using custom aluminium extrusions to ensure longevity of the installation. The ceiling shall have following features and properties: -</p> <p>B.1 Simple and maintenance friendly: Installed in a few hours and finished product shall not require any taping, speckling, or painting, and shall be easily cleanable.</p> <p>B.2 Durable: The systems shall resist shocks and shall not crack with movement or under stretch conditions.</p> <p>B.3 Safe: The membranes and profiles shall have passed the stringent fire and safety tests.</p> <p>B.4 The membrane must have been classified as non-toxic upon burning. The Flexible membrane must be ASTM E 84 class A certified, necessary test report to be submitted along with the supply of material.</p> <p>B.5 Green: Membranes must be 100% recyclable.</p> <p>B.6 There should not be any welding defect on Membranes for years to come on the perimeter edging or in the seams</p> <p>C. Support structure shall be made from heavy duty powder coated modular steel frame. Structure shall be securely grouted from wall, roof and floor. It shall be made up of heavy-duty sections of Mild Steel.</p>		
18.	False flooring systems shall be provided with calcium silicate floor tiles with acoustic laminate finish on the top. Calcium silicate floors are resistant to fire and acoustic laminate offers wide range of colours and has acoustic property to add ergonomic value to ambience of the control room. Top finish material shall be bio-degradable, acoustical in nature and must not emit any harmful VOCs, should be durable in nature and		

Sl.No.	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
	resistant to scratches. Top finish of acoustic Laminate shall reduce impact sound by 14dB (ISO 717-2)). It shall be twin layer linoleum built up from 2 mm acoustic laminate.		
19.	Conventional design / Interior approach using gypsum, wood, wall painting work and fabric shall be deemed unacceptable in the control room area.		
20.	Metallic Door: - With door hinges and locking arrangements and both way handle. Prepare with rigid thermo fused film metal panels. Specification: 0.6mm thick Metal panel sheets, cavity filled with honeycomb inside adequate quantity. Material of the partition and that of metal door will remain the same.		
21.	12mm thick frameless tempered clear glass door: - With door spring and locking arrangements and both way handle and patch fittings. Specifications: Tempered glass is formed by heating glass to the softening point in a horizontal tempering stove, and then quickly cooling it. Safety (tempered): when broken, it spits into tiny harmless pieces.		
22.	Illumination: - Control Room illumination shall be designed as per ISO 11064 norms		
23.	Glass Partition Material (12 mm thick toughened glass) made of clear toughened glass, structural support system for top and bottom including holding system from RCC slab above false ceiling, including runner hung anchor fastener to fix it. Rubber interlinear & gaskets to fix bottom into SS "U" channel in floor. Silicon sealant to filled gap.		
24.	Main Control Room, Conference Room and Visitor Gallery - The non-uniform gaps between the designer metal ceiling / Stretch Ceiling and the adjacent walls/partition shall be covered with calcium silicate ceiling. Remaining Area shall be covered with calcium silicate ceiling. As per approval of Engineer in charge.		

3.14 Suggestive 2D layout for command and control room Interiors - Illustrative



3.15 Suggestive 3D Layout for command and control room interiors – Illustrative - 1





3.16 IR Illuminators as required (Optional)

The infrared illuminators are to be used to enhance the night vision as required.

Sr. No.	Parameters	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
	Make			
	Model			
1	Range	Min. 20 meters or better (as required), with dual-panel, adjustable angle to cover the complete field of view at specified locations for higher accuracy in performance.		
2	Minimum Illumination	High sensitivity at Zero Lux		
3	Power	Automatic on/off operation		
4	Casing	NEMA 4X / IP-66 rated		
5	Operating conditions	As per City weather conditions		
6	Certification	UL/EN/CE/FCC/ISO		

3.17 Field Junction Box

S. No.	Parameters	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
	Make			
	Model			
1	Cabinet Material	Powder Coated to Pure Polyester with 80-120 microns		
2	Material Thickness	Material Thickness - Min 1.2mm with load bearing capacity as Min 1400kg with Min 9-FoldProfile		
3	Number of Locks	Number of locks - Preferably Min 3 Point Locking with PAD Lock		
4	Protection	IP 55, Junction Box design should ensure to keep the temperature within suitable operating range for equipment's and should also avoid intentional water splash and dust intake. Offered item shall be certified for IP55. This is applicable for across the RFP for Field Junction Boxes.		
5	Mounting	On Camera Pole / Ground mounted on concrete base		
6	Form Factor	Rack Mount/DIN Rail/Floor mount		
7	Other Features	Rain Canopy, Cable entry with glands, proper earthing and Fans/any other accessories as required for operation of		

		equipment's within junction box. Proper Locking arrangement should be provided. Opening lever/handles should be made of metal.		
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3.18 LPU for ANPR,RLVD& Video analytics Camera at all junctions

Local Processing Unit:

LPU shall be placed within field junction box of the camera placement. It shall comply to following specification.

All ITMS application should work on local processing unit. LPU shall send processed data to the central software. LPU should provide 7-days storage (optional for bidders proposing solution for ANPR / RLVD with embedded LPU). Bidders to consider the solution design in such a way that any LPUs failure at junction level shall not result in failure of more than one junction.

Note: Bidder can opt for a single Camera for ATCS and RLVD application as per bidder's design requirement.

Sl.No.	Parameters	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
	Make			
	Model			
1	Processor	Intel core-i3 2.4 GHz / ARM or better		
2	RAM	2 GB DDR3 RAM		
3	Storage	Storage Capacity: 1 TB SSD		
4	Network	Network Adapter (NIC). 100 / 1000 baseT		
5	OS	Operating System: Linux / Windows		
6	Temperature	Operating temperature 0 - 70° C		
	Environmental	Encased in IP 65 rated casing for outdoor installation, Components used within the enclosure should be minimum IP 30 or better including LPU.		

3.19 Wireless RF

S.NO	Minimum Specifications	Compliance (Y/N)	Relevant Document / Remarks
	Make		
	Model		
1	Wireless RF OEM should have presence in India for last 5 years and should have a registered office in India. The certificate to this effect should be submitted. The bidder should be either OEM or his authorized dealer/distributor.		
2	Wireless RF OEM should have 24/7 TAC support Center and RMA Center in India. It should have a Toll-free number to reach out for any Technical support required.		
3	Wireless RF Equipment offered shall have complete data sheets and detailed description on OEM web sites.		
6	Wireless RF Technology Partner should provide the Software/Hardware required for their EMS and NMS for controlling their Network elements.		
8	Wireless RF OEM should have Service Centre in India		

S.NO	Minimum Specifications	Compliance (Y/N)	Relevant Document / Remarks
10	Wireless RF OEM Authorized MAF should submit along with Bid submission.		
Point To Multi Point Master BTS Radio - Shorter Distance Pole Connectivity (under 3 Kilo meters)			
1	The BS radio should support 14x14 Multi-User MIMO OFDM , Supporting more than 550 Mbps		
2	Radio System should operate in India ISM Band as per WPC Regulation GSR 1048(E)		
3	The Radio should support AES-128 and FIPS 197 encryption		
4	The BS Radio System should support synchronization mechanism of transmission timing of different collocated-Sites in order to eliminate mutual interference between multiple sites through GPS synchronization.		
5	The Link should not be standard 802.11 a/b/g/n/ac based chipset for preventing security risk over the air.		
6	Radio system should operate on TDD mode with Scheduler mode or in any other parallel technologies. It should not be based on CSMA technology		
7	Radio System should support Channel Bandwidth of 5,10,15,20,30 and 40 MHz		
8	Radio should support channel incremental step size of 2.5 MHz		
9	The BS Radio System must deliver actual/net usable aggregate throughput of up to 800 Mbps with Single sector base station radio		
10	Radio System should support OFDM Multi User with minimum 7 Clients simultaneously.		
11	The Radio System should support the Quality of Service based on 4 Queue according to 802.1p/Diffserve		
12	Radio and antenna System should support smart beamforming for reducing the effect of interference		
13	Radio should support isolation between CPEs		
14	The user should able to configure upload and download percentage in step of 1%. Radio should support Symmetric & asymmetric bandwidth configurable upto 85%: 15% in either direction.		
15	The Radio should support channel accuracy of ± 10 ppm		
16	The BS Radio should support ATPC		
17	The system should have the feature of indications of current modulation available identify interference/performance each chain and both direction		
18	The Base station sector radio should support EIRP as per regulatory		

S.NO	Minimum Specifications	Compliance (Y/N)	Relevant Document / Remarks
19	The Radio System must have built-in Spectrum analyser tool to find the best available frequency to be used.		
20	Radio System should support MTU size of 1700 bytes or higher increasing fragmented frame size by limiting overheads and delivering higher data for a given duration of time		
21	Radio System should support Framing/Coding IEEE802.3/U standard on Ethernet Interface to the network		
22	User must be able to define separate VLAN for management and data traffic, to isolate management traffic from user data traffic.		
23	The base station sector radio should support dual stack IPv4 & IPv6 IP Address from day one		
24	The radio should support IPv4 & IPv6 protocol filtering and prioritization		
25	The radio system should have the feature of controlling assured bandwidth management for each connected CPE, any obstruction/interference at one CPE should not have impact on the performance of other CPEs in the same sector.		
26	Latency should not exceed 20 ms with full traffic load condition		
27	The radio System should support secure protocols SNMP v1/v2c, SNMPv3 and HTTPs for management		
28	The BS radio should have provision to configure destinations for sending SNMP traps to network supervisors and managers		
29	The BS radio should have provision to enable/disable access via Telnet/Web interface for preventing unauthorized access		
30	The BS radio should support RADIUS authentication to authorize the user.		
31	NTP client should be available for time and Date synchronization with NTP server of operator network and for time stamping of events logs		
32	The radio must have provision of Initiation of software reset command to either side radio from Link management software and should not have a HW based reset button for security reasons.		
33	Should have provision of Registration of CPE only from Base Station end for added security. No Registration of CPE to BS should be permitted from CPE end.		
34	Radio system should have additional SFP port for extending data for more than 100 meters		

S.NO	Minimum Specifications	Compliance (Y/N)	Relevant Document / Remarks
35	Radio System should have 2 nos of Gigabit Interface with Auto negotiation (IEEE802.3) LAN & WAN		
36	The Base station sector radio should support 90/120-degree coverage Integrated sector antenna.		
37	The BS radio system should be IP66, IP67 or higher for dust and water Ingress protection and attach certification by International/Government Accredited Lab		
38	The Outdoor Radio Unit Operating temperature should be -20°to +60° Celsius		
39	Humidity supported should be for outdoor radios 95% non-condensing and for indoor units 90% non-condensing		
40	Radio system should support more than 200 Subscriber per sector.		
41	Radio should support Wind speed (operational) of 170km/h.		
42	The radios should support Regulations - FCC PART 15 B and FCC -Part 15 E, RSS,ETSI, WPC - GSR-1048(E), UL 60950 for wireless		
Point To Multi Point Master BTS Radio - Longer Distance Pole Connectivity (more than 3 Km)			
1	Radio System should operate in India ISM Band as per WPC Regulation GSR 1048(E)		
2	The Radio should support AES-128 and FIPS 197 encryption		
3	The BS Radio System should support synchronization mechanism of transmission timing of different collocated-Sites in order to eliminate mutual interference between multiple sites through GPS synchronization.		
4	The Link should not be standard 802.11 a/b/g/n/ac based chipset for preventing security risk over the air.		
5	Radio system should operate on TDD mode with Scheduler mode or in any other parallel technologies. It should not be based on CSMA technology		
6	Radio System should support Channel Bandwidth of 5,10,15,20,30 and 40 MHz		
7	Radio should support channel incremental step size of 2.5 MHz		
8	The BS Radio System must deliver actual/net usable aggregate throughput of up to 300 Mbps with Single sector base station radio		
9	Radio System should support OFDM.		
10	The Radio System should support the Quality of Service based on 4 Queue according to 802.1p/Diffserv		
11	Radio should support isolation between CPEs		
12	The user should able to configure upload and download percentage in step of 1%. Radio should support Symmetric & asymmetric bandwidth configurable up to 85%: 15% in either direction.		
13	The Radio should support channel accuracy of ± 10 ppm		

S.NO	Minimum Specifications	Compliance (Y/N)	Relevant Document / Remarks
14	The BS Radio should support ATPC		
15	The system should have the feature of indications of current modulation available identify interference/performance each chain and both direction		
16	The Base station sector radio should support EIRP as per regulatory		
17	The Radio System must have built-in Spectrum analyser tool to find the best available frequency to be used.		
18	Radio System should support MTU size of 1700 bytes or higher increasing fragmented frame size by limiting overheads and delivering higher data for a given duration of time		
19	Radio System should support Framing/Coding IEEE802.3/U standard on Ethernet Interface to the network		
20	User must be able to define separate VLAN for management and data traffic, to isolate management traffic from user data traffic.		
21	The base station sector radio should support dual stack IPv4 & IPv6 IP Address from day one		
22	The radio should support IPv4 & IPv6 protocol filtering and prioritization		
23	The radio system should have the feature of controlling assured bandwidth management for each connected CPE, any obstruction/interference at one CPE should not have impact on the performance of other CPEs in the same sector.		
24	Latency should not exceed 20 ms with full traffic load condition		
25	The radio System should support secure protocols SNMP v1/v2c, SNMPv3 and HTTPs for management		
26	The BS radio should have provision to configure destinations for sending SNMP traps to network supervisors and managers		
27	The BS radio should have provision to enable/disable access via Telnet/Web interface for preventing unauthorized access		
28	The BS radio should support RADIUS authentication to authorize the user.		
29	NTP client should be available for time and Date synchronization with NTP server of operator network and for time stamping of events logs		
30	The radio must have provision of Initiation of software reset command to either side radio from Link management software and should not have a HW based reset button for security reasons.		
31	Should have provision of Registration of CPE only from Base Station end for added security. No Registration of CPE to BS should be permitted from CPE end.		
32	Radio System should have 2 nos of Gigabit Interface with Auto negotiation (IEEE802.3) LAN & WAN		
33	The Base station sector radio should support 90/120 degree coverage Integrated sector antenna.		

S.NO	Minimum Specifications	Compliance (Y/N)	Relevant Document / Remarks
34	The BS radio system should be IP66/IP67 or higher for dust and water Ingress protection and attach certification by International/Government Accredited Lab		
35	The Outdoor Radio Unit Operating temperature should be -20°to +60° Celsius		
36	Humidity supported should be for outdoor radios 95% non-condensing and for indoor units 90% non-condensing		
37	Radio system should support more than 200 Subscriber per sector.		
38	Radio should support Wind speed (operational) of 170km/h.		
39	The radios should support Regulations - FCC PART 15 B and ETSI EN 302 502 v1.2.1 , RSS,ETSI,WPC - GSR-1048(E) for wireless		
CPE Client Radio / Subscriber Module			
1	Radio System should operate in India ISM Band as per WPC Regulation GSR 1048(E)		
2	CPE should support maximum Tx power up to 27dBm		
3	Radio System should support Channel Bandwidth of 5,10,15,20,30 and 40 MHz		
4	Radio should support channel incremental step size of 2.5 MHz		
5	Radio system should operate on TDD duplexing mode with Scheduler mode or in any other parallel technologies		
6	Modulation technology supported should be OFDM – MIMO 2 x 2 and Diversity		
7	CPE Radio should support adaptive modulation from 64QAM to 256 QAM		
8	The system should have the feature of indications of current modulation available identify interference/performance.		
9	The Radio should support AES-128 , FIPS 197 encryption certifications		
10	Radio should cover distance of 15 Kms or better on availability of LoS with a minimum throughput of 50Mbps		
11	Should support throughput of at least 200 mbps & support of Capacity upgrade license further without changing hardware		
12	Separate VLAN for management and traffic should besupported		
13	Radio System should support MTU size of 1700 bytes or higher, increasing fragmented frame size by limiting overheads and delivering higher data for a given duration of time		

S.NO	Minimum Specifications	Compliance (Y/N)	Relevant Document / Remarks
14	Radio System should have Gigabit Interfaces with Auto negotiation (IEEE802.3) LAN & WAN		
15	Radio System should support Framing/Coding IEEE802.3/U standard on Ethernet Interface to the network		
16	The Radio system should support dual stack IPv4 & IPv6 IP Address from day one		
17	The radio should support IPv4 & IPv6 protocol filtering and prioritization		
18	Radio system should support VLAN according to IEEE 802.1q standards; Should also support Double tagging Q in Q (DVLAN),vlan and QOS remapping		
19	Latency should be lower than 25ms with full load traffic between BS and CPE LAN ports		
20	The Radio System should support the Quality of Service according to IEEE 802.1p, TOS/ Diffserve		
21	CPE radio should support smart dynamic assured capacity controlled by Base station		
22	CPE should support radius authentication. UL and DL bandwidth should be automatically pushed to CPE after radius authentication		
23	The CPE radio should have provision to disable temporarily connection to network behind the CPE for diagnostic purposes such as broadcast/multicast storm		
24	The CPE radio should have option to rate limit broadcast/multicast traffic		
25	The CPE radio must have provision of Initiation of soft reset command from Link management software, and should not have a HW based reset button for security reasons.		
26	Radio should support any GUI/LED/RSSI indication or audible buzzer for antenna alignment		
27	The system should have the feature of RSSI indications to enable fine alignment in azimuth and elevation planes on CPE		
28	The radio System should support secure protocols SNMPv2c , SNMPv3 and HTTPs for management		
29	For ease of field management, should be able to manage Base Station and CPEs using a single Computer / Laptop		

S.NO	Minimum Specifications	Compliance (Y/N)	Relevant Document / Remarks
30	Radio System should support the up gradation of firmware/software over the air through element management software tool		
31	Offered radio be either Integrated antenna form or connectorized according to the link budget required.		
32	Input AC Voltage- 110 – 240 VAC or Input DC Voltage- -20 to -60 VDC		
33	The power consumption of Radio should be Maximum < 20 W		
34	Temperature supported should be for outdoor radios -20° C to 60° C and indoor units 0°C to 40°C		
35	Humidity supported should be for outdoor radios 95% non-condensing and for indoor units 90% non-condensing		
36	The Link should not be standard 802.11 a/b/g/n/ac based chipset for preventing security risk over the air.		
37	Radio should support Wind speed (operational) of 170 km/h.		
38	The radios should support Regulations - FCC PART 15 B and FCC , RSS,ETSI,WPC - GSR-1048(E) for wireless		

3.20 WirelessRF Controller- NMS

S. No	Minimum Specification	Compliance (Y/N)	Relevant Document / Remarks
	Make		
	Model		
1	WLC should support 1000 Device from Day 1 and scalable for upto 2000 Device without Software/hardware change. Proposed NMS should be On-Prem and support 1+1 redundancy		
2	WLC should support Bulk software upgrade of multiple site equipment.		
3	Event/Alarms log should be supported in the system		
4	Radio System should support Scheduled / Delayed SW upgrade.		
6	All RF Device should be monitored from single pane of glass through WLC .		
7	SM Performance Graph should be supported by WLC .		
8	Shall maintain history / inventory of RF Devices .		
9	All Wireless radios PTP , PMP should be managed on single Console Controller.		

3.21 4 port Industrial Switch at Field Locations - Edge Level

S.NO	Parameters	Minimum Specifications	Compliance (Y//N)	Relevant Document / Remarks
	Make			
	Model			
1	Interface	4 x 10/100/1000Base-T Ports POE + 2 x Gigabit SFP Slots + 1 Console Port		
2	Network Protocols	IEEE802.3 10BASE-T; IEEE802.3i 10Base-T;IEEE802.3u;100Base-TX/FX;IEEE802.3ab 1000Base-T; IEEE802.3z 1000Base-X; IEEE802.3x;IEEE802.3af, IEEE802.3at		
3	PoE Specification	PoE Standard: IEEE802.3af/ IEEE802.3at		
		PoE ports: 1-4 ports support PoE+		
		Available PoE Power 120 W or Higher		
4	Performance Specification	Bandwidth: 12Gbps		
		Jumbo Frames:9216 Bytes		
		Packet Forwarding Rate:8.92Mpps		
		MAC Address Table: 8K		
5	Forwarding Mode	Store-and-Forward		
6	Protection	Lightening protection, IP30 protection		
7	Power Supply	Dual DC Input - 48 ~ 57 VDC		
8	Ring Management	Rapid Ring , Self recover time in < 20ms		
9	Spanning Tree	IEEE802.1D (STP) , IEEE802.1W (RSTP) ,IEEE802.1S (MSTP)		
10	VLAN	802.1Q VLAN, Port-Based,, Private VLAN Edge, Voice VLAN, GARP VLAN registration Protocol, Q-in-Q, , MAC-Based VLAN,		
11	IGMP v1/v2 snooping	Supports IGMP Snooping,MLDSnooping,Multicast VLAN Registration (MVR , Supports GARP/GVRP		
12	IEEE 802.3ad LACP	Dynamic Trunk, Static Trunk		
13	LLDP	supports LLDP link discovery protocol		
14	System management	User add / delete user; User login, operation, status, event log , Device reset, configuration save/restore, upgrade management, time setting		
15	Layer 3 Switching	Static, DHCP Server		
17	Class of	Port Based, 802.1p ,DSCP ,TCP/UDP		

S.NO	Parameters	Minimum Specifications	Compliance (Y/N)	Relevant Document / Remarks
	Service			
18	Rate Limiting	Ingress, Egress		
19	Priority Queue Scheduling	WRR, Strict Priority		
	Hardware Queues	8 Hardware Queues		
20	ACLs	L2/L3/L4 , IPv6 Support		
21	Security	Port Security (MAC-based) , IP Source Guard , Storm Control , RADIUS Authentication 802.1x , TACACS+ Authentication , HTTPs and SSL (Secured Web) , BPDU Guard , STP Root Guard , DHCP Snooping , Loop Protection.		
31	DHCP	Client, Relay, Option 66, Option 67 , Option 82		
32	Event/Error Log	Syslog		
33	Management Access Filtering	SNMP, Web, Telnet, SSH		
34	PoE Management	Scheduling, Auto-Checking, Power Delay		
35	Switch Management	SNMP, Remote Monitoring Management, Software Upgrade, Configuration Export/Import, Port Mirroring, LLDP (IEEE802.1AB) or CDP aware or similar, LLDPMED (IEEE802.1AB), Traffic Analyser, NTP		
46	Device Management	Topology View, Floor View, Map View, Dashboard, Traffic Monitoring, Cable Diagnostics		
49	Cooling	Fan Less		
50	Environmental	0 to 70° Celsius Humidity as per Noida weather condition		
51	Certification	CE, FCC, UL		
52	Shell	IP30 protect grade, metal shell		
53	Installation	DIN-Rail or Rack mounts		
54	Certifications	IEC 60068-2-6 or equivalent, IEC 60068-2-27 or equivalent, IEC 60068-2-32 or equivalent, EN61000-4-2 ESD, EN61000-4-3 RS, EN61000-4-4 EFT, EN61000-4-5 Surge, EN61000-4-6 CS, EN61000-4-8 PFMF, FCC Part 15 Class A, (EN61000-3-2, EN61000-3-3, EN61000-6-4, EN61000-6-2, EN55022		

3.22 8 port Industrial Switch at Field Locations - Edge Level

S.N O	Parameters	Minimum Specifications	Compliance (Y//N)	Relevant Document / Remarks
	Make			
	Model			
1	Interface	8 x 10/100/1000Base-T Ports POE + 2 x Gigabit SFP Slots + 1 Console Port		
2	Network Protocols	IEEE802.3 10BASE-T; IEEE802.3i 10Base-T;IEEE802.3u;100Base-TX/FX;IEEE802.3ab 1000Base-T; IEEE802.3z 1000Base-X; IEEE802.3x;IEEE802.3af, IEEE802.3at		
3	PoE Specification	PoE Standard: IEEE802.3af/ IEEE802.3at , PoE ports: 1-8 ports support PoE+ , AvailablePoE Power 240 W or Higher		
4	Performance Specification	Bandwidth: 20Gbps ,Jumbo Frames:9216 Bytes ,Packet Forwarding Rate:14.88Mpps , MAC Address Table: 8K		
5	Forwarding Mode	Store-and-Forward		
6	Protection	Lightening protection, IP30 protection		
7	Power Supply	Dual DC Input - 48 ~ 57 VDC		
8	Ring Management	Rapid Ring,Self-recover time in < 20ms		
9	Spanning Tree	IEEE802.1D (STP), IEEE802.1W (RSTP) , IEEE802.1S (MSTP)		
10	VLAN	802.1Q VLAN, Port-Based,, Private VLAN Edge, Voice VLAN, GARP VLAN registration Protocol, Q-in-Q, , MAC-Based VLAN,		
11	IGMP v1/v2 snooping	Supports IGMP Snooping, MLD Snooping,Multicast VLAN Registration (MVR),Supports GARP/GVRP		
12	IEEE 802.3ad LACP	Dynamic Trunk, Static Trunk		
13	LLDP	supports LLDP link discovery protocol		
14	System management	User add / delete user; User login, operation, status, event log , Device reset, configuration save/restore, upgrade management, time setting		
15	Layer 3	Static Route, DHCP Server		

S.N O	Parameters	Minimum Specifications	Compliance (Y//N)	Relevant Document / Remarks
	Switching			
16	Class of Service	Port Based, 802.1p,DSCP, TCP/UDP		
17	Rate Limiting	Ingress, Egress		
18	Priority Queue Scheduling	WRR, Strict Priority		
19	Hardware Queues	8 Hardware Queues		
20	ACLs	L2/L3/L4, IPv6 Support		
21	Security	Port Security (MAC-based) , IP Source Guard , Storm Control ,RADIUS Authentication 802.1x , TACACS+ Authentication , HTTPs and SSL (Secured Web) , BPDU Guard , STP Root Guard , DHCP Snooping , Loop Protection.		
22	DHCP	Client, Relay , Option 66 , Option 67 , Option 82		
23	Event/Error Log	Syslog		
24	Management Access Filtering	SNMP, Web , Telnet , SSH		
25	PoE Management	Scheduling, Auto-Checking , Power Delay		
26	Switch Management	SNMP, Remote Monitoring Management, Software Upgrade, Configuration Export/Import, Port Mirroring, LLDP (IEEE802.1AB) or CDP aware or similar, LLDPMED (IEEE802.1AB), Traffic Analyser, NTP		
27	Device Management	Topology View, Floor View, Map View, Dashboard, Traffic Monitoring, Cable Diagnostics		
28	Fanless	Fan Less		
29	Environmental	0 to 70° Celsius Humidity as per Noida weather condition		
30	Certification	CE, FCC, UL		
31	Shell	IP30 protect grade, metal shell		
32	Installation	DIN-Rail or Rack mounts		
33	Certifications	IEC 60068-2-6 or equivalent, IEC 60068-2-27 or equivalent, IEC 60068-2-32 or equivalent, EN61000-4-2 ESD, EN61000-4-3 RS, EN61000-4-4 EFT, EN61000-4-5 Surge, EN61000-4-6 CS, EN61000-4-8 PFMF, FCC Part 15 Class A, (EN61000-3-2, EN61000-3-3,		

S.N O	Parameters	Minimum Specifications	Compliance (Y//N)	Relevant Document / Remarks
		EN61000-6-4, EN61000-6-2, EN55022		

3.23 16 port Industrial Switch at Field Locations - Edge Level

S.NO	Parameters	Minimum Specifications	Compliance (Y//N)	Relevant Document / Remarks
	Make			
	Model			
1	Port Configuration	16 X 10M/100M/1G RJ45 POE Port , 2 X 100M/1G SFP , 1 X RJ45 console port .		
3	PoE Function	IEEE802.3at (PoE+ 30W), IEEE802.3af (PoE 15.4W)		
4	PoE Budget	300W or Higher		
5	Switching Bandwidth	36 Gbps		
6	MAC Address	8K		
7	Jumbo Frames	9216 Bytes		
8	Spanning Tree	IEEE802.1D (STP), IEEE802.1W (RSTP), IEEE802.1S (MSTP)		
9	VLAN	802.1Q VLAN, Port-Based,, Private VLAN Edge, Voice VLAN, GARP VLAN registration Protocol, Q-in-Q, , MAC-Based VLAN,		
10	IEEE 802.3ad LACP	Dynamic Trunk, Static Trunk		
11	General features	GARP/GVRP, IGMP Snooping, MLD Snooping, Multicast VLAN Registration (MVR)		
12	L3 features	Static Route, DHCP Server		
13	Class of Service	Port Based, 802.1p,DSCP, TCP/UDP Port		
14	Rate Limiting	Ingress, Egress		
15	Priority Queue Scheduling	WRR, Strict priority		
16	Hardware Queues	8		
17	Security	ACLs: L2/L3/L4 ,IPv6 Support , Port Security (MAC-based),IP Source Guard ,Storm Control ,RADIUS Authentication 802.1x , TACACS+ Authentication , HTTPs and SSL (Secured Web) , BPDU		

S.NO	Parameters	Minimum Specifications	Compliance (Y//N)	Relevant Document / Remarks
		Guard , STP Root Guard , DHCP Snooping , Loop Protection		
18	DHCP	Client, Relay, Option66, Option67, Option 82		
19	Event/Error Log	Syslog		
20	Management Access Filtering	SNMP, WebUI,Telnet, SSH		
21	PoE Management	Scheduling, Auto-Checking, Power Delay		
22	Management	SNMP, Remote Monitoring Management, Software Upgrade, Configuration Export/Import, Port Mirroring, LLDP (IEEE802.1AB) or CDP aware or similar, LLDPMED (IEEE802.1AB), Traffic Analyser, NTP		
23	Carrier Ethernet	1588v2PTP/NTP, OAM (IEEE802.3ah)/ CFM(IEEE802.1ag)/ PM (ITU-T Y.1731), ELPS(ITU-T G.8031)/ERPS (ITU-T G.8032) , Rapid- Ring		
24	Device Management	Topology View, Floor View, Map View, Dashboard, Traffic Monitoring, Cable Diagnostics		
25	Operating Temperature & Humidity	0 to 70° Celsius and Humidity As per Noida weather condition		
26	Storage Temperature	0 to 70° Celsius		
27	Power Source	AC Input :100 ~ 250 VAC, DC Input :52 ~ 57 VDC ,Dual Input :Dual DC		
28	Temperature control	Fanless		
29	Certifications	IEC 60068-2-6 or equivalent, IEC 60068-2-27 or equivalent, IEC 60068-2-32 or equivalent, EN61000-4-2 ESD, EN61000-4-3 RS, EN61000-4-4 EFT, EN61000-4-5 Surge, EN61000-4-6 CS, EN61000-4-8 PFMF, FCC Part 15 Class A, (EN61000-3-2, EN61000-3-3, EN61000-6-4, EN61000-6-2, EN55022		

3.24 24 port Industrial Switch at Field Locations - Edge Level

S.NO	Parameters	Minimum Specifications	Compliance (Y//N)	Relevant Document / Remarks
	Make			
	Model			
1	Port Configuration	20 X 10M/100M/1G RJ45 POE Port , 4 X 100M/1G SFP Port , 1 X RJ45 console port .		
2	Total ports	24		
3	PoE Function	IEEE802.3at (PoE+ 30W) , IEEE802.3af (PoE 15.4W)		
4	Available PoE Power	370W or as per design		
5	Switching Bandwidth	48Gbps		
6	MAC Address	8K		
7	Jumbo Frames	9216 Bytes		
8	Spanning Tree	IEEE802.1D (STP) ,IEEE802.1W (RSTP) ,IEEE802.1S (MSTP)		
9	VLAN	802.1Q VLAN, Port-Based,, Private VLAN Edge, Voice VLAN, GARP VLAN registration Protocol, Q-in-Q, , MAC-Based VLAN,		
10	IEEE 802.3ad LACP	Dynamic Trunk ,Static Trunk		
11	General features	GARP/GVRP , IGMP Snooping ,MLD Snooping ,Multicast VLAN Registration (MVR)		
12	L3 features	Static Route, DHCP Server		
13	Class of Service	Port Based, 802.1p, DSCP , TCP/UDP Port		
14	Rate Limiting	Ingress, Egress		
15	Priority Queue Scheduling	WRR, Strict priority		
16	Hardware Queues	8		
17	Security	ACLs : L2/L3/L4 ,IPv6 Support , Port Security (MAC-based),IP Source Guard ,Storm Control ,RADIUS Authentication 802.1x , TACACS+ Authentication , HTTPs and SSL (Secured Web) , BPDU Guard , STP Root Guard , DHCP Snooping , Loop Protection		
18	DHCP	Client, Relay, Option 66 ,Option 67 ,Option 82		
19	Event/Error Log	Syslog		
20	Management Access Filtering	SNMP, WebUI,Telnet, SSH		

S.NO	Parameters	Minimum Specifications	Compliance (Y//N)	Relevant Document / Remarks
21	PoE Management	Scheduling, Auto-Checking, Power Delay		
22	Management	SNMP (v1, v2c, v3) , RMON (1,2,3 & 9 Groups) ,Software Upgrade ,Configuration Export/Import ,Port Mirroring ,LLDP (IEEE802.1AB) ,LLDP-MED (IEEE802.1AB) , CDP Aware ,sFlow , IPv6 Management NTP		
23	Carrier Ethernet	1588v2PTP/NTP, OAM (IEEE802.3ah)/ CFM(IEEE802.1ag)/ PM (ITU-T Y.1731), ELPS(ITU-T G.8031)/ERPS (ITU-T G.8032) , Rapid- Ring		
24	Device Management	Topology View, Floor View, Map View, Dashboard, Traffic Monitoring, Cable Diagnostics		
25	Operating Temperature & Humidity	0 to 70° Celsius and Humidity As per Noida weather condition		
26	Storage Temperature	0 to 70° Celsius		
27	Power Source	AC Input :100 ~ 250 VAC, DC Input :52 ~ 57 VDC, DualInput: Dual DC		
28	FAN Less	Fanless		
29	Compatibility	All Switches should be from same OEM		
30	Certifications	IEC 60068-2-6 or equivalent, IEC 60068-2-27 or equivalent, IEC 60068-2- 32 or equivalent, EN61000-4-2 ESD, EN61000-4-3 RS, EN61000-4-4 EFT, EN61000-4-5 Surge, EN61000-4-6 CS, EN61000-4-8 PFMF, FCC Part 15 Class A, (EN61000-3-2, EN61000-3-3, EN61000-6-4, EN61000-6-2, EN55022		

3.25 Online UPS for field locations

Sl. No	Parameters	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
	Make			
	Model			

Sl. No	Parameters	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
	Capacity	Adequate capacity (Min 1kva / 900watts) to cover all above IT Components at respective field locations. UPS shall have EPO, ECO mode & shall have RS 232 & USB Port. All UPS in entire project shall be from the same OEM only.		
	Technology	IGBT based PWM Technology, True Online UPS. Input range of UPS shall be 110 to 300Vac for 60% load		
	Input Frequency Range	40 to 70Hz		
	Output Frequency Range	47 ~ 53 Hz or 57 ~ 63 Hz (Synchronized Range). Frequency converter mode is also desired		
	Output Voltage	208 /200/ 220VAC /230VAC. There shall be min 3 nos 10A Indian Sockets available at back of UPS with min. one with programmable socket so as to switch off the non-critical load at pre-fixed time		
	Voltage Regulation	Preferably +/- 2% (or better) and with built in Over Voltage Cut off facility in the Device		
	Frequency	Preferably 50 Hz +/- 0.1% (free Run Mode)		
	Harmonic Distortion (THDv)	Preferably < 3% (linear load)		
	Output Waveform	Pure Sine wave		
	Output Power Factor	0.9		
	Battery Backup	All UPS shall be provisioned for 30 minutes backup.		
	Battery Type	Maintenance – 12V, free sealed SMF Lead Acid batteries/ Lithium ion batteries However, the bidder should ensure life of battery for minimum 5 years.)		
	General Operating Temperature	As per NOIDA weather conditions (de-rating allowed only after 40 deg C for 0.9 O/p PF)		
	Bypass	Automatic		
	Manufacturer Quality	ISO 9001; ISO 14001, OHSAS 18001. OEM in India shall have NABL accredited factory lab. Undertaking from OEM is must on letter with details of end user where UPSs are supplied.		
	Certifications	BIS standard		

3.26 Online UPS for TCCC in Parallel Redundant Mode (N+N)

S. No	Parameter	Minimum Specifications	Compliance (Y/N)	Relevant Document / Remarks
		All UPS in entire project(Field & for DC or ICC) shall be from the same OEM only		
	Make			
	Model			
1	UPS Topology	Double Conversion On-Line		
2	Power Rating (VA / Watts)	30 KVA / 30kW		
3	Form Factor	Tower		
Output parameter				
1	Output Power Capacity	30 KVA / 30 KW i.e with Unity Power Factor Only		
2	Isolation X-mer	Inbuilt into the UPS Cabinet		
3	Efficiency	96% (without X-mer in Ckt)		
4	Output Voltage Distortion	2% for Linear load & 4% for Non-Linear load		
5	Output Frequency (sync to mains)	50/60 Hz +/- 3 Hz user adjustable +/- 0.1		
6	Crest Factor	03:01		
7	Waveform Type	Sine wave		
8	Output Connections	Three phase 380/400/415VAC		
9	Overload (Unity PF)	125% - 10 min & 150% - 1 min or better		
10	Bypass	Internal Bypass (Automatic and Manual)		
Input Parameter				
1	Nominal Input Voltage	400VAC		
2	Input Frequency	40 - 70 Hz (auto sensing)		
3	Input voltage range for main operations	305 – 477VAC for 30kva/30kW load at 40 deg C - Hard Wire 5-wire (3PH + N + G)		
4	Other Input Voltages	380/400/415 VAC		
5	Input. O/p, Bypass Breaker Capacity & Manual Bypass Switch	Inbuilt into the UPS only		
Communications & Management				
1	Interface Port(s)	DB-9 RS-232, RJ-45 10/100 Base-T, SMART Slot x 1, MINI Slot x 1, Parallel Port x 2, REPO Port x 1, Charger Detection Port x 1, Input Dry Contact x 2, Output Dry Contact x 6		
2	Control panel	Multi-function LCD status and control		

S. No	Parameter	Minimum Specifications	Compliance (Y/N)	Relevant Document / Remarks
		console with min 200 event log feature		
3	Audible Alarm	Audible and visible alarms prioritized by severity		
4	Emergency Power Off (EPO)	Yes		
Environmental				
5	Operating Environment - 0 - 40 °C without de-ration on upto 30kW			
6	Operating Relative Humidity - 0 - 95%			
7	Storage Temperature - -15 - 45 °C			
8	Storage Relative Humidity - 0 - 95%			
Conformance				
1	Regulatory Approvals - EN/IEC 62040-2, EN/IEC 62040-1-1; CE			
2	Manufacturer - Quality - ISO 9001; ISO 14001, OHSAS 18001, TL 9000. OEM in India shall have NABL accredited factory lab. Undertaking from OEM is must on letter with details of end user where UPSs are supplied			
30 Min Battery Back up				
1	Battery Type - Maintenance – 12V, SMF Lead Acid batteries/ Lithium ion batteries should be provide in all UPS. Bidders to quote accordingly.			
2	Nos. of Battery –The battery nos shall be adjustable at site so as to increase the back-up time in future. Suitable for providing 30 min backup on full load for Command Centre			

3.27 This clause stands deleted

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3.28 Work stations at Traffic Command and Control Center

Sl.No.	Parameter	Minimum Specifications	Compliance (Y / N)	Relevant Document / Remarks
	Make			
	Model			
1	Processor	Minimum I 7 with 4 GB GPU based graphics card.		
2	RAM	32GB 2666MHz ECC DDR4 Memory expandable up to 64GB (4 Dimm Slots)		
3	Graphics card	Professional Graphics with 8GB Memory (NVIDIA Quadro or AMD)		
4	HDD	256GB SSD + 1TB 3.5inch Serial ATA (7,200 Rpm) Hard Drive		
5	Media Drive	NO CD / DVD Drive		
6	Network interface	10/100/1000 Mbps autosensing on board integrated RJ- 45 Ethernet port.		
7	Audio	Line/Mic IN, Line-out/Spr Out		
8	Ports Keyboard Keyboard	Minimum 6 USB ports (out of that 2 in front) 102 keys minimum OEMkeyboard		
9	Mouse	2 button optical scroll mouse (USB)		
10	PTZ joystick controller	PTZ speed dome control for IP cameras Minimum 10 programmable buttons Multi-camera operations Compatible with all the camera models offered in the solution Compatible with VMS /Monitoring software offered		
11	Monitor	23.8" 3840x2160 resolution, IPS, HDMI, DP, mDP Ports, 4USB		
12	Operating System	Windows/Linux		
13	Power supply	SMPS; Minimum 400-watt Continuous Power Supply with Full ranging input and APFC. Power supply should be 90% efficient with EPEAT Gold certification for the system		

3.29 Video Wall

Sl.No.	Parameters	Minimum Specification	Compliance(Y/N)	Documentation / Reference
	Make			
	Model			
	Technology	LASER DLP based Rear Projection Video wall		
1.	Display Wall Screen Size	DLP Cubes of minimum 70" diagonal in a configuration (to be decided by the bidder) to be able to display minimum 64 CCTV video windows simultaneously in Full HD resolution.		
2.	Projection Technology	DLP Rear Projection		
3.	Total Resolution	Minimum 30000 X 4200 pixels (min. 132 MP)		
4.	Aspect Ratio	16:9		
5.	Light Source	Laser light source		
6.	Brightness	on screen brightness minimum 400 cd/m2 and engine brightness 3500 luminous		
7.	Dust Proof	IP6x certified by a third-party laboratory		
8.	Contrast ratio	Typical 1600:1		
9.	Color Calibration	Automatic inbuilt sensors for color and brightness management mechanism to be provided.		
10.	Connectivity	Each display module shall support HD and SDinputs		
11.	Full viewing angle	180°		
12.	Lifetime	Normal mode: 60 000h Eco mode: 80 000h		
13.	Inputs	DVI-D in and HDMI in		
14.	Power Supply	Inbuilt redundant dual power supply inside cube		
15.	Eco mode	Less than 350 Watt		
16.	Screen to Screen Gap	0.5 mm or lower at temperatures from 20~25 Deg. C		
Environment conditions				
17.	Operating Humidity	Up to 80% non-condensing		

Sl.No.	Parameters	Minimum Specification	Compliance(Y/N)	Documentation / Reference
18.	Operating Temperature	10°C-40°C 50°F-105°F		
19.	Storage Temperature	0°C-40°C 32°F-105°F		
20.	Cube Depth	As per OEM design standards		
21.	Pixel clock	Minimum 162 MHz or higher		
22.	ScreenHalf-Gain ViewingAngle	Horizontal: 36 degrees or better		
		Vertical: 34 degrees or better		
23.	Operating Hours	24x7x365		
Specifications of Display Wall Controllers				
	Make			
	Model			
24.	Display controller	Controller to control Video Wall as per offered configuration		
25.	Processor	Latest Generation 64bit Quad Core processor or better		
26.	RAM	16 GB DDR3 ECC RAM or better		
27.	HDD	Minimum 500 GB		
28.	RAID	Should support all RAID, 0, 1, 5		
29.	Networking	Dual-port Gigabit Ethernet Controller with RJ-45 ports		
30.	Accessories	104 key Keyboard and Optical USB mouse		
31.	USB Ports	Minimum 2 USB Ports		
32.	Platforms	Support 64-bit Operating System Windows		
33.	Power Supply	(1+1) Redundant hot swappable		
34.	Chassis Type	19" Rack mount		
35.	Redundancy support	Power Supply, HDD, LAN port		
36.	Scalability	Display multiple source windows in any size, anywhere on the wall		
37.	Universal Inputs	20 Nos		
38.	Operation	The controller shall be designed for 24 x 7 operation and high availability		

Sl.No.	Parameters	Minimum Specification	Compliance(Y/N)	Documentation / Reference
39.	Wall configuration	Outputs as per the no. of cubes offered. Loop in Loop Out of signal from cube to cube is Not Allowed		
40.	Video Wall, Controller, Cube & wall management	Video Wall, Controller, Cube & Wall management software should be from same OEM for ensuring smooth operations. All licenses of the software supplied with Controller and Video Wall should be with perpetual license and cost of the same should be included in the quoted cost.		
Specifications of Video Wall Management Software				
	Make			
	Model			
41.	Layouts	The software should be able to pre-configure various display layouts and access them at anytime with a simple mouse click or schedule/timer based.		
42.	Sources	The software should be able display multiple sources anywhere on video wall in any size.		
43.	Remote Viewing	The video wall content will be able to show live on any remote display connecting on same LAN through wall management client software		
44.	User management	Key features of Video Wall management Software		
		Central configuration database		
		Auto-detection of network sources		
		Online configuration of sources, displays and system variables		
45.	Software features	Video Wall Control Software shall allow commands on wall level or cube level or a selection of cubes:		
		Switching the entire display wall on or off.		
		Setting all projection modules to a common brightness target.		
		Fine-tune color of each cube		
46.	Client/Browser & Server based Architecture	Should support Multiple clients / Consoles to control the Wall layouts		

Sl.No.	Parameters	Minimum Specification	Compliance(Y/N)	Documentation / Reference
47.	Region Management	The Software should be able to define regions for different operators		
48.	Scaling	Software should enable the user to display multiple sources (both local & remote) up to any size and anywhere on the display walls		
49.	Display	The software should be able to create layout and launch them as and when desired		
50.	Remote Control	The Display Wall and sources (both local & remote) should be controlled from Remote PC through LAN without the use of KVM Hardware.		
51.	Scheduling	It should be possible to schedule specific Layout based on time range		
52.	Authentication	The software should provide at least 3 layers of authentication		
53.	Scenarios	Software should be able to Save and Load desktop layouts from Local or remote machines		
54.	Layout Scheduler	All the Layouts can be scheduled as per user convince.		
55.	Layout Scheduler	Software should support auto launch of Layouts according to specified time event by user		
56.	Layout Management	It should be possible to create layouts comprising of screen scrapped content of Workstations, DVI inputs, Web sources, URLs configured as sources. Layouts can be pre-configured or changed in real time		

Note: Bidder needs to provide a video wall of total resolution to be 132 MP resolution minimum

3.30 Poles at Junctions (as required)

S. No.	Description	Compliance (Y/N)	Relevant Document / Remarks
	Make		
	Model		
	Cantilever Pole		

S. No.	Description	Compliance (Y/N)	Relevant Document / Remarks
1.	Hot dip galvanized pole with silver coating of 86 micron as per IS:2629 min 10 cm diameter pole and suitable bottom and top thick HT plate along with base plate size 30x30x15 cms suitable for wind speed 120 km/hr with / without suitable arm bracket and with J type foundation bolts. Fabrication in accordance with IS 2713 (1980)		
2.	Mounting facilities: To mount Traffic signals, Pedestrian Signals, Switch, PA system etc.		
3.	Pipes, Tubes: All wiring must be hidden, through tubes/pipes. No wires shall be visible from outside.		
4.	All poles at junctions shall have earthing arrangement for protection against lightning and surge.		

3.31 Surge Protectors for Electronics Equipment:

The bidder to ensure adequate protection against surge current at power inputs..

3.32 Core Switch (If required)

S.NO	Parameters	Minimum Specifications	Compliance (Y/N)	Relevant Document / Remarks
	Make			
	Model			
1	Port Configuration	20 Nos of 20 100M/1G SFP Port, 4 Nos of GbE RJ45/SFP Combo Port , 4 Nos of 1G/10G SFP+ Port ,1 X Console port DB9		
2	Switching Bandwidth	128Gbps or Higher		
3	Forwarding Performance	95.232 Mbps		
4	MAC Address	32K		
5	Jumbo Frames	10056 Bytes		
6	Operating Temperature	-20°C to 60°C		
7	Operating Humidity	10 to 90% RH		
8	Storage Temperature	-25°C to 70°C		
9	Storage Humidity	10 to 90% RH		
10	AC Input	100V-240V		
11	DC Input	24V ~ 48V DC		
12	Dual Input	AC/DC		

S.NO	Parameters	Minimum Specifications	Compliance (Y/N)	Relevant Document / Remarks
13	Spanning Tree	IEEE802.1D (STP) , IEEE802.1W (RSTP) , IEEE802.1S (MSTP)		
14	VLAN	802.1Q VLAN, Port-Based,, Private VLAN Edge, Voice VLAN, GARP VLAN registration Protocol, Q-in-Q, , MAC-Based VLAN,		
15	IEEE 802.3ad LACP	Dynamic Trunk. Static Trunk		
16	L2 Features	GARP/GVRP, IGMP Snooping , MLD Snooping , Multicast VLAN Registration (MVR)		
17	L3 Features	Static Route, DHCP Server		
18	Class of Service	Port Based, 802.1p , DSCP , TCP/UDP Port		
19	Rate Limiting	Ingress, Egress		
20	Priority Queue Scheduling	WRR, Strict Priority		
21	Hardware Queues	8		
22	ACLs	L2/L3/L4, IPv6 Support		
23	Security	Port Security (MAC-based) , IP Source Guard , Storm Control , RADIUS Authentication 802.1x , TACACS+ Authentication , HTTPs and SSL (Secured Web) , BPDU Guard , STP Root Guard , DHCP Snooping , Loop Protection		
24	DHCP	Client,Relay,Option 66 , Option 67 ,Option 82		
25	Event/Error Log	Syslog		
26	Management Access Filtering	SNMP , Web , Telnet , SSH		
27	Switch Management	SNMP (v1, v2c, v3) , RMON (1,2,3 & 9 Groups) , Software Upgrade , Configuration Export/Import , Port Mirroring , LLDP (IEEE802.1AB) , LLDP-MED (IEEE802.1AB) , CDP Aware , sFlow ,NTP		
28	Carrier Ethernet	Rapid- Ring based		

S.NO	Parameters	Minimum Specifications	Compliance (Y/N)	Relevant Document / Remarks
29	MGMT Port	OOB MGMT Port		

3.33 Cloud Service Provider (CSP)

1. CSP should be MeitY empaneled.

Data generated under the project should be made available on requirement for a period of 1 month. However, for flagged data total storage for minimum 1 year storage should be facilitated. Necessary hardware and software shall be installed accordingly. This will be applicable for On Cloud / Hybrid / On premises data center.

3.34 Semi Dome Camera

Sr. No.	Parameters	Minimum Specifications	Compliance (Y / N)	Deviation (if any)
	Make			
	Model			
	Parameters	Minimum Specifications		
1.	Video Compression	H.264, H.265 / H.265+		
2.	Video Resolution	2 MP or better		
3.	Frame rate	25 FPS at all resolutions		
4.	Image Sensor	½.8" Progressive Scan CCD / CMOS		
5.	Lens Type	Varifocal, C/CS Mount, IR Correction full HD lens		
6.	Shutter Speed	1/5 ~ 1/1,00,000 sec		
7.	Lens	2.8-12 mm / 5-50 mm or better (as required)		
8.	IR Cut Filter	Automatically Removable IR-cut filter		
9.	Day/Night Mode	Colour, Mono, Auto		
10.	Region of Interest	4 zones (ON/OFF)		
11.	S/N Ratio	≥ 50 Db		
12.	WDR	120 dB		
13.	RAM/ ROM	256 MB/ 32 MB		
14.	Light Compensation	WDR(100dB), Day/Night(ICR), 2D-DNR, AWB, AGC, BLC, HLC functions		
15.	SD Card	The Camera shall support HD and SD output switchable capability		
16.	Operating Temperature	0 – 50 deg C		

3.35 Digital Video Recorder

This clause stands deleted

3.36 65" LED Display / TV

S.no	Parameter	Minimum Specification	Compliance (Yes / No)	Deviations (if any)
Make				
Model				
1	Resolution	Full HD 1080 P 16:9 aspect – ratio should be changed to 3840 X 2160 or higher for 4K resolution		
2	Contrast Ratio	54.16736111 5000:1 or higher for CCTV application		
3	Screen Mirroring, Wireless content sharing	Data from Mini PC should be shared wirelessly on multiple Phones/Tablets without any other hardware requirement. IFPD should allow user to share/mirror the content of Laptop/Desktop (Mac, Windows) and mobile device (ios, Android, windows) wirelessly (upto 4 devices simultaneously), and Wireless presentation should allow user to access their Laptop/Desktop through IFPD		
4	Input	HDMI (2), DP, DVI-D, RGB, Audio, USB 3.0		
	Integrated Wireless and Bluetooth Module	It should be dual band (2.4Ghz and 5Ghz). It should deliver fast wireless internet connection for interactive displays. It should support dual frequency of 2.4GHz and 5.0GHz bandwidth, along with the newest 802.11AC standard to provide up to 433Mbps transmission. It should also fast Bluetooth 4.0 connection with BLE (Bluetooth Low Energy) which saves power for one-to-one file and data transferring.		
6	Bezel in mm	12mm (T / R / L) or less, 20mm (B) or less		
7	Mount	VESA Standard Mount Interface		
8	Certification	BIS, CE, RoHS		

3.37 Enterprise Management System with NMS & Helpdesk Solution (Technical & functional Requirements)

To ensure that ICT systems are delivered at the performance level envisaged, it is important that an effective monitoring and management system be put in place. It is thus proposed that a proven Enterprise Management System (EMS) is proposed by the bidder for efficient management of the system, reporting, SLA monitoring and resolution of issues. Various key components of the EMS to be implemented as part of this engagement are –

1. Network Monitoring System
2. Server Monitoring System
3. Helpdesk System

The solution should provide a unified web-based console which allows role based access to the users.

Network Monitoring System

Solution should provide fault & performance management of the server side infrastructure and should monitor IP\SNMP enabled devices like Routers, Switches, Sensors, etc. Proposed Network Management shall also help monitor key KPI metrics like availability, in order to measure SLA's. Following are key functionalities that are required which will assist administrators to monitor network faults & performance degradations in order to reduce downtimes, increase availability and take proactive actions to remediate & restore network services.

Network Monitoring Services

The activities shall include:

1. MSI shall provide services for management of ICCC Project to maintain performance at optimum levels on a 24 x 7 basis.
2. MSI shall monitor and administer the network.
3. MSI shall create and modify VLAN, assignment of ports to appropriate applications and segmentation of traffic.
4. MSI shall carry out break fix maintenance of the LAN cabling or maintenance work requiring civil work.

Minimum Functional Specifications

- The proposed solution must automatically discover manageable elements connected to the infrastructure and map the connectivity between them. Solution should provide centralized monitoring console displaying network topology map.
- Proposed solution should provide customizable reporting interface to create custom reports for collected data.
- The system must use advanced root-cause analysis techniques and policy-based condition correlation technology (at network level) for comprehensive analysis of infrastructure faults.
- The system should be able to clearly identify configuration changes and administrators should receive an alert in such cases.
- The solution should support multicast protocols too, if the overall project solution offered includes multicast.

Server Performance Monitoring System

Minimum Functional Specifications

- The proposed tool should integrate with network performance management system and support operating system monitoring for various platforms supplied as part of this Project.
- The proposed tool must provide information about availability and performance for target server nodes.
- The proposed tool should be able to monitor various operating system parameters such as processors, memory, files, processes, file systems, etc. where applicable.
- If the offered server/computing solution includes virtualisation, then the server performance monitoring solution must include virtualisation monitoring capabilities.

Helpdesk System

- Helpdesk system should provide incident management, problem management templates along with helpdesk SLA system for tracking SLA's pertaining to incident resolution time for priority / non-priority incidents.
- System should also automatically create tickets based on alarm type.
- The proposed helpdesk solution must provide flexibility of logging, viewing, updating and closing incident via web interface for issues related to the project.
- IT Asset database should be built and managed by the bidder, in order to carry out the scope of work items.

Note: The bidders may please note that these can be individual solutions or a single solution

Printer for printing e-Challans

Sr. No.	Parameters	Minimum Specifications	Compliance (Y / N)	Deviation (if any)
	Make			
	Model			
	Parameters	Minimum Specifications		
1.	Print Technology	Laser		
2.	Print Quality Black (Best)	Up to 600 x 600 dpi		
3.	Display	7.6 cm (3) colour touchscreen		
4.	Processor Speed	600 MHz		
5.	Wireless Capability	Yes		
6.	Connectivity, Standard	Hi-Speed USB 2.0 port; built-in Fast Ethernet 10/100Base-TX network port; built-in WiFi 802.11b/g/n		
7.	Network Ready	Standard (built-in Fast Ethernet, WiFi 802.11 b/g/n)		
8.	Compatible Operating Systems	Full software installs supported on: Windows 10 (32-bit/64-bit), Windows 8 (32-bit/64-bit), Windows 7 (32-bit/64-bit), Windows Vista (32-bit/64-bit), Windows XP (32-bit) (SP2 or higher); Driver only installs supported on: Windows Server 2012; Windows Server 2008 (32-bit), Windows Server 2008 (Standard Edition), Windows Server 2008 (Enterprise Edition), Windows Server 2003 (32-bit) (SP1 or higher); Mac OS X v 10.6.8 or higher; Linux: Please check Linux on-line support: http://www.hpopenopensource.com/hplip-web/install.html		
9.	Operating System (Supported Note)	Driver only installs supported on: Windows Server 2012; Windows Server 2008 (32-bit), Windows Server 2008 (Standard Edition), Windows Server 2008 (Enterprise Edition), Windows Server 2003 (32-bit) (SP1 or higher)		
10.	Memory	128 MB		
11.	Paper Handling Input, Standard	150-sheet input tray		
12.	Paper Handling Output, Standard	100-sheet face-down bin		
13.	Duplex Printing	Manual (driver support provided)		
14.	Copy Speed (Normal)	Black: Up to 20 cpmColor: First Copy Out and Copy Speed measured using ISO/IEC 29183, excludes first		

Sr. No.	Parameters	Minimum Specifications	Compliance (Y / N)	Deviation (if any)
		set of test documents. For more information see http://www.hp.com/products1/ISO/digital_copy/index.html . Exact speed varies depending on the system configuration, software application, driver, and document complexity.		
15.	Copy Resolution (Black Text)	Up to 300 x 300 dpi		
16.	Copy Resolution (Color Text And Graphics)	Up to 400 x 600 dpi		
17.	Power Consumption	480 watts (Printing), 186 watts (Copying from ADF), 4.5 watts (Ready), 1.1 watts (Sleep/Auto-Off), 0.2 watts (Manual Off) Values subject to change. Power numbers are the highest values measured using all standard voltages. See hp.com/support for current information. Power requirements are based on the country/region where the printer is sold. Do not convert operating voltages. This will damage the printer and void the product warranty.		

**CONTRACTOR SIGNATURE
WITH SEAL**

OFFICER INVITING TENDER



NEW OKHLA INDUSTRIAL DEVELOPMENT AUTHORITY

Request for Proposal

**Selection of Implementation Agency (IA) for implementation of
Integrated Security and Traffic Management System (ISTMS) for
NOIDA City**

JOB No: 41/GM-R/S.M.(E&M)-III/2019-20

RFP Volume III – Service Level Agreement & Bid Formats

Dated:-02/11/2020

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1. Bid Submission Formats

Form 1: Eligibility and Technical Proposal

1.1.1 Form 1.1: Bid Cover Letter

(To be submitted on the letterhead of the bidder)

Date:

To

Chief Executive Officer
New Okhla Industrial Development Authority
NOIDA, Uttar Pradesh

Subject: Technical Proposal for “Selection of Implementation Agency (IA) for implementation of Integrated Security and Traffic Management System (ISTMS) for NOIDA City”

RFP Reference No: <Reference Number>

Dear Sir/Ma'am,

With reference to your “Request for Proposal, “Selection of Implementation Agency (IA) for implementation of Integrated Security and Traffic Management System (ISTMS) for NOIDA City”, we hereby submit our Technical Proposal, and Financial Proposal.

We hereby declare that:

- a. We have submitted the BG for EMD of INR [.....] and DD for Tender fee of INR [.....].
- b. We hereby declare that all information and details furnished by us in the Bid are true and correct, and all documents accompanying such application are true copies of their respective originals.
- c. We agree to abide by our offer for a period of 180 days from the date of bid submission prescribed by Authority and that we shall remain bound by a communication of acceptance within that time.
- d. We have carefully read and understood the terms and conditions of the RFP and the conditions of the contract applicable to the RFP. We do hereby undertake to provision as per these terms and conditions.
- e. In the event of acceptance of our bid, we do hereby undertake:
 - To supply the products and commence services as stipulated in the RFP document
 - To undertake the project services for entire contract period from the date of signing of the contract as mentioned in the RFP document.
 - We affirm that the prices quoted are inclusive of design, development, delivery, installation, commissioning, training, O&M and of all out of pocket expenses, taxes (including GST), levies discounts etc.
- f. We do hereby undertake, that, until a formal contract is prepared and executed, this bid, together with your written acceptance thereof and notification of award of contract, shall constitute a binding contract between us.
- g. We understand that the Authority may cancel the bidding process at any time and that Authority is not bound to accept any bid that it may receive without incurring any liability towards the bidder.
- h. We fully understand and agree to comply that on verification, if any of the information provided in our bid is found to be misleading the selection process, we are liable to be dismissed from the selection process or termination of the contract during the project, if selected to do so.

In case of any clarifications please contact by email at

Thanking you,

Yours sincerely,

(Signature of the bidder)

Printed Name & Designation

Seal:

Date: Place:

Business Address:

1.2 Form 1.2: Documents of Eligibility Criteria

Compliance sheet for Eligibility proposal documents

The Eligibility proposal should comprise of the following basic requirements. The documents mentioned in this compliance sheet along with this form, needs to be a part of the Eligibility Proposal.

Sl. No.	Eligibility Criteria	Documents required	Submitted (Y/N)	Document details along with Page No.
Eligibility criteria for SI				
1	The Bidder should be a company incorporated for a period of at least Ten (10) years prior to the date of bid submission. Consortium / Joint venture not accepted.	Copy of certificate of Incorporation/Registration under Companies Act 1956/ Companies Act 2013 (for Indian companies)/ LLP Act or Registered Abroad under any other Suitable Act.		
2	The Bidder should have valid GST registration in India	Copy of GST and PAN		
3	The Bidder should have an average annual turnover of INR 100 Crores over the last three (3) Financial Years from IT/ITES/ICT projects It should be noted that: <ul style="list-style-type: none"> Foreign currency Turnover will be converted into Indian Rupees based on RBI reference rate applicable as on the date of opening of proposals without assigning any weightage factor. 	1. Audited financial statements for last three Financial Years. 2. Statutory auditor's/CA certificate clearly specifying the annual turnover for the specified years. 3. In case, bidder is not meeting technical/ financial criteria in any means, they can use the capability of parent / Subsidiary / group company of ultimate parent for pre-qualification & technical qualification. In such case, the bidder needs to submit a letter of consent signed and stamped by the authorized signatory of concerned entity,		

Sl. No.	Eligibility Criteria	Documents required	Submitted (Y/N)	Document details along with Page No.
		stating to use the experience and provide technical support to the concerned bidding organization in case of any requirement. The Indian bidding entity to this project shall submit a self-declaration certificate on a judicial stamp paper, stating using the technical capability of parent/ subsidiary/ group company of ultimate parent.		
4	The Bidder shall have positive net worth in last Financial Year .	Certificate from the Statutory Auditor/CA on net worth for last Financial Year		
5	The Bidder should have office in the Delhi NCR or should furnish an undertaking that the same would be established within 30 days from the date of contract signing.	Notarized Power of Attorney / Board Resolution to be submitted		
6	The Bidder shall have following Certification valid at the time of submission of bid: - ISO 9001:2008 or 2015	Copies of the valid certificate to be provided. The bidder is to ensure that the quality certificates remain valid throughout the period of the contract.		
7	The Bidder shall not be blacklisted by any State / Central Government/ Department or Central /State PSUs for providing similar services, as on date of submission of the proposal	Letter of undertaking to this effect on the letter head signed by the Authorized signatory of Bidder.		
8	The bidder or OEM should have supplied at least 50 0 units of cameras for ANPR application	Bidder to provide work order / completion certificate		

Sl. No.	Eligibility Criteria	Documents required	Submitted (Y/N)	Document details along with Page No.
9	<p>The Bidder should have experience of city Surveillance / CityITMS / Smart City projects / similar government project involving various critical components in last seven (7) years from the date of bid submission, with at least four (4) out of Seven (7) components below mentioned components in a single project:</p> <ol style="list-style-type: none"> 1. Adaptive Traffic Control System (ATCS) 2. ANPR Cameras / Speed detection / RLVD 3. Variable Message Signboards (VMS) 4. PA System / Emergency Call Box (ECB) / e challan 5. Video Incident Detection System / Analytics / Surveillance 6. Command & Control Centre 7. Data Centre <p>One project of value 80% of estimated cost OR</p> <p>Two projects of value 60% of estimated cost each OR</p> <p>Three projects of value 40% of estimated cost each</p>	<p>Work order/ Contract agreement& completion certificate issued in last 7 years as on bid submission and clearly highlighting the scope of work, Bill of Material and value of the contract/order.</p>		
10	<p>The Bidder should have experience of the following confirming to implementation of video surveillance / ITMS projects involving supply & installation of outdoor cameras operational in open outdoor environment in preceding Seven (7) Years from the date of bid submission. Cameras installed inside controlled environment like buildings, Booths, Cabins etc will not be considered. At least 1 project of 800 outdoor cameras</p> <p>or</p> <p>2 projects of 600 outdoor cameras each</p>	<p>Work order/ Contract agreement& completion certificate issued in last 7 years as on bid submission and clearly highlighting the scope of work, Bill of Material and value of the contract/order.</p>		

Sl. No.	Eligibility Criteria	Documents required	Submitted (Y/N)	Document details along with Page No.
	h or 3 projects of 400 outdoor cameras each			
11	The bidder should have experience (smart city / Safe City / ITMS) of minimum Two (2) projects in last Seven (7) years as on date of bid submission.	Copy of Work Order/ Agreement & Completion Certificate issued in last 7 years as on bid submission date.		
12	The bidder to submit notarized Power of Attorney/ Board resolution in name of the signing authority of the bid document.	Notarized Power of Attorney / Board Resolution to be submitted		
Pre-Qualification Criterion for OEMs				
13	Camera OEM should have supplied at least 2000 IP Outdoor Cameras in India / Globally as on bid submission date cumulatively in maximum 3 (three) order	<ul style="list-style-type: none"> OEM to provide work order / completion certificate 	•	•
14	OEM of Camera should have a fully owned and equipped repair and maintenance center in INDIA for minimum 3 years, as on date of bid submission.	<ul style="list-style-type: none"> Details of Address and support phone number for India base Technical support center, repair and maintenance center (self-declaration) 	•	•
15	The OEM of Camera should have the following certifications: ISO 9000/1:2008/2015 / ISO 27001	<ul style="list-style-type: none"> OEM to provide relevant document 	•	•
16	The Camera & VMS OEM should be ONVIF compliant conforming 3 rd party integrations as on bid submission date	<ul style="list-style-type: none"> Copy of the report shall be submitted 	•	•
17	OEM should not be black listed / banned / debarred by any Central / State government in India and globally as on bid submission date.	<ul style="list-style-type: none"> Letter of undertaking by OEM on their letter head signed by the authorized signatory 	•	•
18	The MAC address of the IP cameras must be registered in the name of quoted OEM of the product.	<ul style="list-style-type: none"> Self-declaration by OEM on their letter head signed by the authorized signatory 	•	•
19	Equipment supplied by the OEM shall have valid manufacturing license from competent authority.	<ul style="list-style-type: none"> OEM Self declaration duly signed and stamped on letter head & valid manufacturing license. 	•	•

Sl. No.	Eligibility Criteria	Documents required	Submitted (Y/N)	Document details along with Page No.
20	NEMA 4X / NEMA TS2 / IP-66 and IK10 rated or better	Lab report to be submitted.		
21	Camera hardware shall have life of at least 10 years.	OEM Self declaration duly signed and stamped on letter head.		
22	ATCS solution OEM should have implemented similar solution as on bid submission date for At least 32 junctions in one city OR At least 24 junctions in Two Cities. OR At least 16 junctions in Three Cities.	Copies of work order with BOQ or Experience letter/CA/ or Company Secretary certified letter, is to be submitted.		
23	The OEM of ATCS should have any 02 quality certifications from CMML3, ISO 9001:2015, and ISO 14001. This is to ensure only quality OEM participates in the bid. The certification should be valid as on date of Bid Submission. ATCS solution offered by the bidder shall also be certified/recognized/approved by a premier Institute or Government Authority India/globally (This shall be with supported by documents).	Certificate copies		
24				
25	ANPR System OEM should have supplied minimum 1000 ANPR licenses (cumulative) globally	Copies of work order with BOQ or Experience letter/CA/ or Company Secretary certified letter, in case of NOIDA stating the quantity.		
26	OEM for Command and Control Centre Application (CCC) should have deployed its application in minimum of 2 projects in India/globally in Smart Cities / Safe Cities / Large Campus / Integrated Security Systems.	Copies of work order with BOQ or Experience letter/CA/ or Company Secretary certified letter		
27	The OEM of Command & Control Application should have quality certifications like ISO 9001:2015, ISO 14001 / ISO 27001 to ensure only quality OEM participation, valid as on date of Bid Submission	Certificate copies		

1.3 Form 1.3: Particulars of Bidder

The Table below provides the format in which general information about the bidder must be furnished.

Sr.	Information	Details
1.	Name of Bidding firm	
2.	Address and contact details of Bidding firm	
3.	Firm Registration Number and Year of Registration	
4.	Web Site Address	
5.	Status of Company (Public Ltd., Pvt. Ltd., etc.)	
6.	Company's GST Registration No.	
7.	Company's Permanent Account Number (PAN)	
8.	Bankers Name, Branch and Address	
9.	Account No.	
10.	IFSC No.	
11.	Company's Revenue for the last 3 years (Year wise)	
12.	Name, Address, email, Phone nos. and Mobile Number of Contact Person	

The documents to be submitted as per the eligibility requirements mentioned in Volume 1 of the RFP.

1.5 Form 1.5: Format for Declaration by the bidder for not being Blacklisted / Debarred

(To be submitted on the Letterhead of the bidder)

Date: dd/mm/yyyy

To

Chief Executive Officer
New Okhla Industrial Development Authority
NOIDA, Uttar Pradesh

Subject: Declaration for not being debarred / black-listed by Central / any State Government departments in India as on date of submission of the bid

RFP Reference No: <Reference Number>

Dear Sir/Ma'am,

I, authorized representative of <<name of the firm>>, hereby solemnly confirm that our Company is not blacklisted by any State / Central Government/ Department or Central /State PSUs for unsatisfactory past performance, corrupt, fraudulent or any other unethical business practices or for any other reasons, as on bid submission date.

Thanking you,
Yours faithfully,

Signature of Authorized Signatory (with official seal)

Date:

Name:

Designation:

Address:

Telephone & Fax:

E-mail address:

1.6 Form 1.6: Cloud Service Provider's Authorization Form / Letter of Support

(To be submitted on the Letterhead of the CSP)

Date: dd/mm/yyyy

To

Chief Executive Officer
New Okhla Industrial Development Authority
NOIDA, Uttar Pradesh

Subject: Authorization for cloud services for the project, "Selection of Implementation Agency (IA) for implementation of Integrated Security and Traffic Management System (ISTMS) for NOIDA City"

RFP Reference No: <Reference Number>

Dear Sir/Ma'am,

This is to certify that we, <Insert complete legal name of the CSP>, are the MeitY empanelled Cloud Service Provider and our legal entity is registered in India. We hereby confirm that we comply with the policies and guidelines issued by MeitY from time to time.

I confirm that we have shown our interest with <Insert complete legal name of Bidder> for providing Cloud Services for aforementioned subject. We will sign a contract once the bidder is selected post completion of bidding procedure. We also confirm that we also comply with all the Cloud Services requirements mentioned in this RFP document.

I also confirm that the <Name of the Bidding Firm> has due authorization from us to use our Cloud Services for the purposes of hosting and running the proposed ITMS for NOIDA, as per the specifications mentioned in this RFP. The Bidder has authorization for use of the following set of Services (as given in below table) which are available with us for this purpose:

Sl. No.	Authorized services for ITMS
1.	
2.	
n.	

It is confirmed that even when the Purchaser changes the Implementation Agency, our Services would remain available for NOIDA subject to applicable SLAs and service policies for the NOIDA.

We hereby confirm that this undertaking is made in good faith and the aforesaid declarations are binding on us under the aforementioned Bid

For and on behalf of <Insert CSP's company name>

<Signed and Sealed>

<Name of Authorized Signatory>

<Designation>

<Contact Details>

Cc: Bidder's corporate legal name & Address

Note: This letter of authority should be on the letterhead of the CSP and should be signed by a duly authorized person of CSP. The bidder in its Proposal should include this CSP Authorization Form (CSPAF). The CSPAF needs to be mandatorily submitted in the format as specified, and no Non-Conformity of the same shall be accepted by the Purchaser.

1.7 Form 1.7: Power of Attorney / Letter of Authorization

[To be executed on non-judicial stamp paper of the appropriate value in accordance with relevant Stamp Act. The stamp paper to be in the name of the company who is issuing the power of attorney]

Know by all men by these presents, we (Name of the Bidder and address of their registered office) do hereby constitute, appoint and authorize Mr. / Ms.....(Name and residential address of Power of attorney / Letter of Authorization holder) who is presently employed with us and holding the position of as our Attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our Proposal for the "Request for Proposal for The Selection of Implementation Agency (IA) Implementation of Integrated Security and Traffic Management System (ISTMS) for NOIDA, NOIDA", including signing and submission of all documents and providing information / responses to the NOIDA, representing us in all matters before NOIDA, and generally dealing with the NOIDA in all matters in connection with our Proposal for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said Attorney pursuant to this Power of Attorney / Letter of Authorization and that all acts, deeds and things done by our aforesaid Attorney shall and shall always be deemed to have been done by us.

For

Name:

Designation:

Date:

Time:

Business Address:

Seal:

Accepted,

(Signature) (Name, Title and Address of the Attorney / Authorized Signatory)

Note:

- The mode of execution of the Power of Attorney / Letter of Authorization should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the

executant (s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.

- The Power of Attorney / Letter of Authorization shall be provided on Rs.100/- stamp paper.
- The Power of Attorney / Letter of Authorization should be supported by a duly authorized resolution of the Board of Directors of the Bidder authorizing the person who is issuing this power of attorney / letter of authorization on behalf of the Bidder.

Form 2 – Guidelines for Technical Proposal

1.8 Form 2.1 - Technical Bid Cover Letter

(To be submitted on the letterhead of the bidder)

Date:

To
Chief Executive Officer
New Okhla Industrial Development Authority
NOIDA, Uttar Pradesh

Subject: Technical Proposal for “Selection of Implementation Agency (IA) for implementation of Integrated Security and Traffic Management System (ISTMS) for NOIDA City”

RFP Reference No: <Reference Number>

Dear Sir/Ma'am,

We, the undersigned offer to provide Systems Implementation solutions to the NOIDA on “Selection of Implementation Agency (IA) for implementation of Integrated Security and Traffic Management System (ISTMS) for NOIDA City” with your Request for Proposal dated <insert date> and our Proposal.

It is hereby confirmed that I am entitled to act on behalf of my company / corporation / firm / organization and empowered to sign this document as well as such other documents, which may be required in this connection.

We declare that all the services shall be performed strictly in accordance with the RFP documents.

We confirm that the information contained in this response or any part thereof, including its exhibits, and other documents and instruments delivered or to be delivered to NOIDA, Government of Uttar Pradesh is true, accurate, verifiable and complete. This response includes all information necessary to ensure that the statements therein, do not in whole or in part mislead the Authority in its evaluation process. We also confirm that we shall not attract conflict of interest in principle.

We hereby declare that in case the contract is awarded to us, we shall submit the contract Performance bank guarantee in the form prescribed at Form 4 of this Volume.

We understand that our bid is binding on us and that you are not bound to accept a Bid you receive. This bid is valid for 180 days after opening of technical bid. We shall extend the validity of the bid if required by Authority.

Thanking you,

Yours sincerely,

(Signature of the Lead Bidder)

Designation

Date and Seal

1.9 Form 2.2 - Check-list for the Technical Proposal

Sl. No.	Particulars	Documents required	Document details along with Page No.	Submitted (Y/N)
1	Technical Bid Cover Letter	As per format provided at Form 2.1		
2	Undertaking-Technical Support Arrangement with OEM	As per format provided at Form 2.7		
3	OEM Authorization Letter	As per format provided at Form 2.8		
A. Company Profile				
1	<p>Average annual turnover of Bidder in last 3 years i.e. FY 2016-17, 2017-18, 2018-19:</p> <ul style="list-style-type: none"> • \geq INR 300 crore • \geq INR 200 cr. to 300 Cr. • INR 100 cr. to 200 Cr. 	<p>1. Audited financial statements for last three Financial Years.</p> <p>2. Statutory auditor's/CA certificate clearly specifying the annual turnover for the specified years.</p> <p>3. In case, Financial Capability of the Parent Company of the Bidder / Lead member of Consortium are considered, Bidder / Lead member of Consortium need to submit Letter of undertaking on the letter head Parent Company signed by authorized signatories of Parent Company.</p>		
2	<p>The bidder should have following resources on its rolls (permanent employee) as on bid submission date:</p> <ul style="list-style-type: none"> • \geq 800 resources • \geq 200 to < 800 resources • > 100 to <200 resources 	Certification letter from HR		

B. Relevant Past Experience				
1	<p>The Bidder should have experience of city Surveillance / city ITMS / Smart City projects / similar government project involving various critical components in last Seven (7) years from the date of bid submission, with at least four (4) out of Seven (7) components below mentioned</p> <p>components in a single project: :</p> <ol style="list-style-type: none"> 1. Adaptive Traffic Control System (ATCS) 2. ANPR Cameras with Speed detection / RLVD 3. Variable Message Signboards (VMS) 4. PA System / ECB 5. Video Incident Detection System / Analytics / Surveillance 6. Command & Control Centre 7. Data Centre <p>One project of value INR 80 Cr</p> <p>OR</p> <p>Two projects of value INR 60 Cr each</p> <p>OR</p> <p>Three projects of value INR 40 Cr each.</p> <ul style="list-style-type: none"> • ≥ 4 projects • ≥ 2 to <4 projects • 1 project 	<p>Work order/ Contract agreement issued in last 7 years as on bid submission and clearly highlighting the scope of work, Bill of Material and value of the contract/order.</p>		

2	<p>The Bidder / OEM should have experience of the following confirming to implementation/ integration of at least two video surveillance / ITMS projects in preceding Seven (7) Years from the date of bid submission.</p> <ul style="list-style-type: none"> • At least 1 project of 800 outdoor cameras OR • 2 projects of 600 outdoor cameras OR • 3 projects of 400 outdoor cameras 	Work order/ Contract agreement issued in last 7 years as on bid submission and clearly highlighting the scope of work, Bill of Material and value of the contract/ order.		
3	<p>Bidder / OEM should have experience in implementation of Adaptive Traffic Control System during last Seven (7) years from the date of bid submission.</p> <ul style="list-style-type: none"> • More than 55 Junctions • Between 50 to 55 Junctions 	Work order/ Contract agreement issued in last 7 years as on bid submission and clearly highlighting the scope of work, Bill of Material and value of the contract/ order.		
<p>Approach and Methodology</p> <p>Understanding of ToR and approach of Implementation, Work Plan and Technical presentation and live demonstration of proposed solution:</p> <ul style="list-style-type: none"> • Need to Demonstrate the TCCC control room setup with visualization of minimum 2x2 Screen • Integration with Traffic surveillance (General surveillance Camera, RLVD, ANPR with TCCC as per RFP) • Functionality as per RFP of Environmental sensor and ECB • Integration of at least 4 components as per RFP 				
Manpower Detail		Detailed CV of the proposed resources as per prescribed format		

1.10 Form 2.3 - Format for Project Citation

Sl. No.	Particulars	Details	Attachment Ref. Number
1.	Name of the project		
2.	Client for which the project was executed		
3.	Project Details		
4.	Description of the project		

5.	Scope of services		
6.	Total cost of the project		
7.	Duration of the project (no. of months start date, completion date, current status)		
8.	Letter from the client to indicate the successful completion of the projects (if any) / Or Self Certificate		
9.	Copy of Work Order/Agreement		

Note: Bidder is required to use above formats for all the projects referenced by the bidder for the technical qualification criteria.

1.11 Form 2.4 - Structure of Proposed Solution

Bidders are required to provide a detailed approach & methodology to execute the entire project. Bidders are advised to comply with the below provided headers/approach components while detailing out their solution. The following components are indicative, and bidders may provide additional points which add value to the proposed solution.

1. Understanding of requirement and Implementation approach
 - Understanding of requirements
 - Proposed Architectures and its components
 - Work Plan & its adequacy
2. Proposed solution & Implementation Strategy
 - Unpriced Bill of Material
 - End to end integrated solution design and architecture
 - Features of the proposed applications, data management and analytics
 - Select case studies of implementation of proposed applications meeting similar requirements
 - Recommended Hardware and Software details, Proposed strategy and integration approach encompassing all solutions (with ICCC and police e- Chalan system)
 - Timelines and modalities for implementation in a time bound manner
 - Project implementation approach, strategy and operations & maintenance plan including comprehensiveness of fall-back strategy and planning during rollout
 - Any other area relevant to the scope of work and other requirements of the project
3. Assessment of Manpower deployment, Training and Handholding plan
 - Deployment strategy of Manpower
 - Contingency management
 - Mobilization of existing resources and additional resources as required
 - Training and handholding strategy
4. Project Monitoring and Communication Plan– Bidder's approach to project monitoring and communications among stakeholders.
5. Risk Management Plan – Bidder's approach to identify, respond / manage and mitigate risks
6. Quality Control plan - Bidder's approach to ensure quality of work and deliverables
7. Operation and Maintenance Plan
8. Escalation matrix during contract period

Note:

- All the pages (documentary proofs and other documents that may be attached) should contain page numbers and would have to be uniquely serially numbered.
- Inadequate information shall lead to disqualification of the bid.

1.12 Form 2.5 – Format for CV of Key Personnel / Resources

Name:					
1	Proposed position or role				
2	Date of Birth			Nationality	
3	Education	Qualification	School/ College/ University	Degree Obtained	Year of Passing
4	Years of Experience				
5	Areas of Expertise and no. of years of experience in this area				
6	Certifications and Training attended				
7	Employment Record	Employer	Position	From	To
		[Starting with present position and last 2 firms, list in reverse order, giving for each employment: dates of employment, name of employing organization, positions held.]			
Relevant Work Undertaken that best illustrates the experience as required for the Role					
Project No.					
Name of assignment:					
Year					
Location					
Employer Name:					
Client Name					
Main project features:					
Positions held:					
Activities performed:					

1.13 Form 2.6 – Format for Proposed Project Team

Implementation Phase

Sr. No.	Proposed role	Resource Name	Qualification	Experience	Area of Expertise	Task Assigned	Time committed for the engagement

Note: The above list of project team personnel provided by the bidder shall have the specialized experience as per the requirement of Scope of work.

Operation & Maintenance Phase

Sr. No.	Proposed role	Resource Name	Qualification	Experience	Area of Expertise	Task Assigned	Time committed for the engagement

1.14 Form 2.7 – Undertaking - Technical Support Arrangement with OEM

<< To be printed on letter head of Bidder and Signed by the Authorized Signatory>>

Date:

To:

Chief Executive Officer
New Okhla Industrial Development Authority
NOIDA, Uttar Pradesh

Dear Sir/Ma'am,

Subject: Request for Proposals for Selection of Implementation Agency (IA) for Implementation of Integrated Traffic Management System (ITMS) for NOIDA, NOIDA - Technical Support Arrangement with OEM

RFP Ref:

We, the undersigned, having read and examined the requirements of the project, have licensed all our products /COTS that should complement the solution in the best possible way and that all the business and functional requirements should be fulfilled either by the products/COTS or through customizations.

We have/will enter(ed) into requisite arrangements with the OEMs for the following:

- Professional Services and Technical Support: I confirm that we have chosen the products from OEMs who have professional support services in India (or through their authorized channel partners). These professionals shall be made available as and when required for supporting all technical aspects of project implementation, solution maintenance and support during entire period of Project including extended period if any as stated in RFP. This does not include web support or remote support.
- Vetting of solution: I confirm that OEM's support should be taken for vetting of the technical solution as proposed and implemented. In case there are multiple OEM's, we shall take individual OEM support for vetting of their respective technical solution.
- It is hereby confirmed that I am entitled to act on behalf of my company and empowered to sign this document as well as such other documents, which shall be required in this connection.

Summary of Arrangement with OEMs for implementation and operations support

(Signature of the Authorized signatory of the Bidder)

Name & Designation:

Seal:

Date & Place:

Business Address:

1.15 Form 2.8 – Format for OEM Authorization

(This form has to be provided by the OEMs of the respective products proposed on their letter head with due reference detail)

Date:

To,

Chief Executive Officer
New Okhla Industrial Development Authority
NOIDA, Uttar Pradesh
RFP Ref: <>

Dear Sir/Ma'am,

We, who are established and reputable manufacturers / producers of _____ having factories / development facilities at (address of factory / facility) do hereby authorize M/s _____ (Name and address of Agent) to submit a Bid, and sign the contract with you against the above Bid Invitation.

We hereby extend our full guarantee and warranty for the Solution, Products and services offered by the above firm against this Bid Invitation. We also undertake to provide any or all of the following materials, notifications, and information pertaining to the Products manufactured or distributed by the Supplier:

- a. Such Products as the Purchaser may opt to purchase from the Supplier, provided, that this option shall not relieve the Supplier of any warranty obligations under the Contract; and
- b. in the event of termination of production of such products:
 - i. advance notification to the Purchaser of the pending termination, in sufficient time to permit the Bank to procure needed requirements; and
 - ii. Following such termination, furnishing at no cost to the Purchaser, the blueprints, design documents, operations manuals, standards, source codes and specifications of the Products, if requested

We duly authorize the said firm to act on our behalf in fulfilling all installations, Technical support and maintenance obligations required by the contract.

Yours faithfully,

(Name of the authorized signatory, Designation, Contact number & Address)

Note:

This letter of authority should be on the letterhead of the manufacturer and should be signed by a person competent and having the power of attorney to bind the manufacturer. The Bidder in its Bid should include it.

1.16 Form 2.9 – Deployment Personnel

Sl. No.	Name of staff	Staff input in Months (in the form of Bar chart)								Total staff-per-months proposed
		1	2	3	4	5	6	7	n	

1. Inputs for each proposed manpower should be indicated individually; for any proposed support staff, if proposed by the bidder it should be indicated by category

2. Months are counted from the start of the assignment.

Full time input:

Part time input:

1.17 Form 2.10 - Deviations

Bidder needs to submit a NIL deviation certificate.

1.18 Format of affidavit for OEM claiming benefit under Make in India Policy

Date:

I, _____ S/o, D/O, W/O , _____ , Resident of _____ do hereby solemnly affirm and declare as under:

That I agree to abide by the terms and conditions of <Name of Nodal Ministry / Department > of Government of India, issued vide Notification No: _____ dated _____

That the information furnished hereinafter is correct to best of my knowledge and belief and I undertake to produce relevant records before the procuring entity or any other authority so nominated by the <Name of Nodal Ministry / Department > , Government of India, for the purpose of assessing the Local Content (LC).

That the LC for all inputs which constitute the said Product/Services/Works has been verified by me and I am responsible for the correctness of the claims made therein.

That in the event of the LC of the Product/Services/Works mentioned herein is found to be incorrect and not meeting the prescribed LC norms, based on the assessment of an authority so nominated by the <Name of Nodal Ministry / Department > , Government of India and I will be liable as under clause 9 (I) of Public Procurement (Preference to Make in India) Order 2017.

I agree to maintain all information regarding my claim for LC in the Company's record for a period of 2 years from the date of bidding and shall make this available for verification to any statutory authorities.

- I. Name and details of the Local supplier (Registered Office, Manufacturing unit location, nature of legal entity)
- II. Date on which this certificate is issued
- III. Product/Services/Works for which the certificate is produced
- IV. Procuring agency to whom the certificate is furnished
- V. Percentage of LC claimed
- VI. Name and contact details of the unit of the manufacturer
- VII. Sale Price of the product
- VIII. Ex-Factory Price of the product
- IX. Freight, insurance and handling
- X. Total Bill of Material
- XI. List and total cost value of inputs used for manufacture of the Product/Services/Works
- XII. List and total cost of inputs which are locally sourced. Please attach LC certificates from local suppliers. if the input is not in-house.
- XIII. List and cost of inputs which are imported, directly or indirectly

I confirm that our company or firm < Name of the Company/Firm>, are aware regarding restrictions on procurement from a country which shares a land border with India; I hereby certify that the Product/Services/Works and its components proposed in this Tender are not manufactured in such a country and is eligible to be considered.

I hereby certify and confirm that the Product/Services/Works and its components proposed in this Tender are being Manufactured at < Name and address of facility> in India and is currently underproduction and not being simply assembled.

For and on behalf of _____ (Name of firm/entity)

Authorized signatory (To be duly authorized by the Board of Directors)

<Insert Name, Designation and Contact No. and date>

Identified by me

Before Me

Advocate

<Name with Signature & Seal>

Date:

Place: Public Notary

<Name with Signature & Seal>

Date:

Place:

Note:

1. Affidavit should be on Non-judicial stamp paper of Rs.100/-
2. Please fill up the details as per the documents you are annexing.
3. Affidavit should be attested by Notary Public.

Form 3 – Guidelines for Financial Proposal

1.19 Form 3.1 - Financial Proposal Cover Letter

(To be submitted on the Letterhead of the Bidder)

Date:

To

Chief Executive Officer

New Okhla Industrial Development

Authority NOIDA, Uttar Pradesh

Subject: Financial Proposal for “Selection of Implementation Agency (IA) for implementation of Integrated Security and Traffic Management System (ISTMS) for NOIDA City”

RFP Reference No: <Reference Number>

Dear Sir/Ma'am,

We, the undersigned, offer to provide the Implementation services for “RFP for Selection of Implementation Agency (IA) for implementation of Integrated Security and Traffic Management System (ISTMS) for NOIDA City” in accordance with your Request for Proposal dated <Date> and our Proposal (Technical and Financial Proposals). Our attached Financial Proposal is for the sum of <Amount in words and figures>. This amount is inclusive of the local taxes.

1. Price and Validity:

- All the prices mentioned in our Tender are in accordance with the terms as specified in the RFP documents. All the prices and other terms and conditions of this Bid are valid for a period of 6 months from the date of opening of the Bid.
- We hereby confirm that our prices include all taxes. However, all the taxes are quoted separately under relevant sections.
- We understand that the actual payment would be made as per the existing indirect tax rates during the time of payment.

2. Unit rate:

We have indicated in the relevant forms enclosed, the unit rates for the purpose of on account of payment as well as for price adjustment in case of any increase to/ decrease from the scope of work under the contract.

3. Deviations:

We declare that all the services shall be performed strictly in accordance with the Tender documents except for the variations and deviations, all of which have been detailed out exhaustively in the following statement, irrespective of whatever has been stated to the contrary anywhere else in our bid. Further we agree that additional conditions, if any, found in the Tender documents, other than those stated in deviation schedule, shall not be given effect to.

4. TENDER PRICING

We further confirm that the prices stated in our bid are in accordance with your Instruction to Bidders included in Tender documents.

5. QUALIFYING DATA

We confirm having submitted the information as required by you in your Instruction to Bidders. In case you require any other further information/documentary proof in this regard before evaluation of our Tender, we agree to furnish the same in time to your satisfaction.

6. BID PRICE

We declare that our Bid Price is for the entire scope of the work as specified in the RFP Vol IIA & IIB, Scope of Work section & Requirement Specification respectively. These prices are indicated Commercial Bid attached with our Tender as part of the Tender.

7. PERFORMANCE GUARANTEE

We hereby declare that in case the contract is awarded to us, we shall submit the Performance Guarantee as specified in the Form 1 of this volume.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal.

We hereby declare that our Tender is made in good faith, without collusion or fraud and the information contained in the Tender is true and correct to the best of our knowledge and belief.

We understand you are not bound to accept any Proposal you receive.

Yours faithfully,

(Signature of the Authorised signatory)

(Name and designation of the of the Authorised signatory)

Name and seal of Bidder

Date:

Place:

1.20 Form 3.2 - Financial Proposal Format & Instructions**Note:**

1. Bidder should provide all prices, quantities as per the prescribed format under this Annexure. Bidder should not leave any field blank. In case the field is not applicable, Bidder must indicate "0" (Zero) in all such fields.
2. It is mandatory to provide breakup of all Taxes, Duties and Levies wherever applicable and/or payable.
3. Purchaser reserves the right to ask the Bidder/Implementation Agency (IA) to submit proof of payment against any of the taxes, duties, levies indicated.
4. Purchaser shall take into account all Taxes, Duties & Levies for the purpose of Evaluation
5. 1% CESS will be applicable.
6. The bidder shall ensure that they are GST compliant and their quoted tax structure / rates are as per GST law.
7. **All figures in INR**

Financial Proposal Summary Sheet:

Financial Summary Sheet			
Table No	Particulars	Unit	Amount
1	Hardware – Field Equipment	Rs.	
2	Hardware - Command and Control Centre	Rs.	
3	Cloud Infrastructure and its Component	Rs.	
4	Software	Rs.	
5	Network	Rs.	
6	Manpower Services	Rs.	
7	Annual Maintenance Contract (AMC) for ITMS System (O&M phase)	Rs.	
8	Annual Maintenance Contract (AMC) for Existing HTMS System	Rs.	
Grand Total. (Without Taxes)		Rs.	
Add CESS 1%		Rs.	
Total Taxes @		Rs.	
Grand Total with CESS and applicable Taxes		Rs.	
In Words:			

Table 1:**(All prices to be inclusive of taxes and in INR only)**

(A) Hardware - Field Equipment					
Sl. No	Particulars	Qty	Unit	Rate	Amount
Surveillance and ITMS System					
1	2MP IP Outdoor PTZ Camera, 24VAC, power supply, Pole mount bracket and all other accessories as per specifications.	76	No.		
2	2MP IP Fixed Box / bullet HD Camera with varifocal lens, housing for outdoor use and all other accessories as per specifications.	278	No.		
3	ANPR Camera and all other accessories as per specifications.	693	No.		
4	Speed detection Cameras / Radar with LPU, Software as per specifications.	18	No.		
5	LPU for ANPR / Video analytics Camera and all other accessories as per specifications.	164	No.		
6	ATCS traffic controller and all other accessories as per specifications including traffic lights, Common Device timer (CDT).	40	No.		
7	Environment sensor and all other accessories as per specifications.	25	No.		
8	Public Announcement system for outdoor use and all other accessories as per specifications for all junction with min 205 speakers, Emergency Call Box for all junctions and suitable amplifiers and controllers etc to make the system complete as per RFP.	82	No.		
9	Variable Message Signboard (3.8 by 1.9 mtr) and all other accessories as per specifications.	10	No.		
10	Variable Message Signboard (2.8 by 1.9 mtr) and all other accessories as per specifications.	10	No.		
11	Junction Box IP 66 Outdoor for Power Supply, Network Switch and all other accessories as per specifications.	143	No.		
12	Small Junction Box IP 66 Outdoor for ANPR LPU and all other accessories as per specifications.	273	No.		
13	Online UPS with 1 hours backup with stand at each junction Box(as per load requirement) and all other accessories as per specifications.	143	No.		
14	4/8/16/24 Port Industrial Grade Managed network switch at each junction Box (PoE) and all other accessories as per specifications.	143	No.		

(A) Hardware - Field Equipment					
Sl. No	Particulars	Qty	Unit	Rate	Amount
16	Pole structure for Cameras (Considering 9m/6m poles + foundation bolts as per requirement and all other accessories as per specifications.	76	No.		
18	Pole with Arm/ cantilever and all other accessories as per specifications.	272	No.		
20	Gantry for Camera /Variable Message Signboard and all other accessories as per specifications.	20	No.		
Passive components (wired network)					
21	CAT-6 24 port Jack Panel	143	No.		
22	CAT-6 Patch cords 1 mtr	1061	No.		
23	CAT-6 Patch cords 3mtrs	1061	No.		
24	6 Core Rack Mounted LIU with Splice traand all other accessories as per specifications.	143	No.		
25	RJ 45 connectors and all other accessories as per specifications.	2000	No.		
26	Voltage Surge Suppressor for junction Box and all other accessories as per specifications.	143	No.		
27	100m Power Cable till Junction Box and all other accessories as per specifications.	143	No.		
28	CAT-6 Cable for Camera to Junction Box and all other accessories as per specifications.	84000	Mtr		
Civil & Electrical Work					
29	Civil work for Cameras junction and all other accessories as per specifications.	84	Job		
30	Civil work for Variable Message Signboard junction and all other accessories as per specifications.	20	Job		
	Total. (Without Taxes)				
	Add CESS 1%				
	Total Taxes @				
	Total with CESS and applicable Taxes				
In Words					

Table 2:**(All prices to be inclusive of taxes and in INR only)**

(B) Hardware - Command & Control Centre					
Sl. No	Particulars	Qty	Unit	Rate	Amount
Surveillance and ITMS System					
1	Workstation Desktop surveillance systems with display and all other accessories as per specifications.	10	No.		
2	Laser based video wall and all other accessories as per specifications.	1	No.		
3	Keyboard Joystick to control PTZ Cameras and all other accessories as per specifications.	3	No.		
4	Semi dome cameras for internal surveillance and all other accessories as per specifications.	10	No.		
5	LED TV for war room, cafeteria, reception and all other accessories as per specifications.	3	No.		
6	PSTN / IP phones for each desk, meeting room, war room, cafeteria and all other accessories as per specifications.	5	No.		
7	24 port Gigabit, Layer 3 Switch and all other accessories as per specifications.	2	No.		
8	PA system Dialling Console with license	2	No.		
9	Diesel Generator (30 KVA) and all other accessories as per specifications.	2	No.		
10	UPS 30 KVA with 1 Hr SMF battery backup (1+1 Redundancy) and all other accessories as per specifications.	2	No.		
11	Printer for printing challans	5	No.		
12	Site Preparation Cost (50x 50 ft area approximately)				
12.1	Furniture & fixtures (tables, chairs, cubicle separator etc	1	No.		
12.2	Carpeting including war room, meeting room etc.	1	No.		
12.3	Electrical lighting & fittings and all other accessories.	1	No.		
12.4	Civil work in all respects to make the system complete.	1	No.		
12.5	Access control (PIN+PASSWORD + BIOMETRIC Option) with Iris and figure print options	1	No.		
12.6	Addressable fire detector Fire detector & proofing	1	No.		

(B) Hardware - Command & Control Centre					
Sl. No	Particulars	Qty	Unit	<u>Rate</u>	<u>Amount</u>
	with integration with building fire Panel.				
12.7	Air conditioning (2 Ton each)	5	No.		
	Total. (Without Taxes)				
	Add CESS 1%				
	Total Taxes @				
	Total with CESS and applicable Taxes				
In Words					

Table 3:**(All prices to be inclusive of taxes and in INR only)**

(C) Cloud Infrastructure and its Component					
Sl. No	Particulars	Qty	Unit	Rate	Amount
1	Cloud requirement for complete solution including Servers, Firewall, Storage, Networking components and Infrastructure during implementation	1	Lot		
2	Cloud requirement for complete solution including Servers, Firewall, Storage, Networking components and Infrastructure during 1st Year O&M	1	Year		
3	Cloud requirement for complete solution including Servers, Firewall, Storage, Networking components and Infrastructure during 2nd Year O&M	1	Year		
4	Cloud requirement for complete solution including Servers, Firewall, Storage, Networking components and Infrastructure during 3rd Year O&M	1	Year		
5	Cloud requirement for complete solution including Servers, Firewall, Storage, Networking components and Infrastructure during 4th Year O&M	1	Year		
6	Cloud requirement for complete solution including Servers, Firewall, Storage, Networking components and Infrastructure during 5th Year O&M	1	Year		
	Total. (Without Taxes)				
	Add CESS 1%				
	Total Taxes @				
	Total with CESS and applicable Taxes				
In Words					

Table 4:**(in INR only)**

(D) Software					
Sl. No	Particulars	Qty	Unit	Rate	Amount
Surveillance Software					
1	Video Management Software	1	Base License		
2	Video Management Software	360	Per Camera Licence		
3	Facial Recognition Software	2	Per camera License		
ITMS					
4	TCCC Platform	1	License		
5	Video Analytics Software	1	Base License		
6	Video Analytics Software (with multiple analytics, as No helmet, Triple riding etc)	275	License		
7	ANPR, RLVD, analytics Base license	1	Base License		
8	ANPR per camera license	693	Per Camera Licence		
9	Red light violation software	150	Per Camera Licence		
10	e-Challan software	1	License		
11	Variable message signboard software	1	License		
12	Public announcement system	82	License		
13	ATCS application Software	1	License		
14	Environment Sensor Software	1	License		
15	Integration with RTO DB and other interfaces	1	License		
Other Software					
16	Server Virtualization Software Note: The bidder should incorporate the cost of hardware (requisite hardware including servres, storage, network racks, firewall etc) under this line item.	1	License		
17	Server OS	50	License		
18	Anti-Virus & Theft protection	1	License		
19	Enterprise Management System (EMS/NMS)	1	Licence		

(D) Software					
Sl. No	Particulars	Qty	Unit	Rate	Amount
20	Data Base Software	1	License		
	Total. (Without Taxes)				
	Add CESS 1%				
	Total Taxes @				
	Total with CESS and applicable Taxes				
In Words					

Table 5:**(All prices to be inclusive of taxes and in INR only)**

E) Network					
Sl. No	Particulars	Qty	Unit	Rate	Amount
1	Connectivity Charges for 84 junctions per year	5	Years		
2	Connectivity Charges between DC (over Cloud) and TCCC (Primary and secondary) for 1 years	5	Years		
	Total. (Without Taxes)				
	Add CESS 1%				
	Total Taxes @				
	Total with CESS and applicable Taxes				
In Words					

Table 6:**(All prices to be inclusive of taxes and in INR only)**

(F) Manpower Services					
Sl. No	Particulars	Qty	Unit	Rate	Amount
Implementation Phase					
1	Project Director 01 Nos	1	No.		
2	Project Manager 01 No. for 06 Months	6	Months		
3	Cloud Solution Architect (IT, DC & C&C Infrastructure) 01 No. for 03 Months	3	Months		
4	Solution Architect (Network and CCTV surveillance system) 01 No. for 05 Months	5	Months		
5	Technical Lead Cum Trainer (IT and Surveillance industry) 01 No. for 06 Months	6	Months		
6	Site implementation/installation team consisting of 20 No. for 06 Months	120	Months		
7	System and NW Administrator 01 No. for 04 Months	4	Months		
8	Database Administrator 01 No. for 03 Months	3	Months		
O&M Phase					
9	Project Manager	60	Months		
10	IT Administrator	60	Months		
11	Site Maintenance team of 3 members for 5 years	60	Months		
12	IT Helpdesk personal	60	Months		
	Total. (Without Taxes)				
	Add CESS 1%				
	Total Taxes @				
	Total with CESS and applicable Taxes				
In Words					

Table 7:**(All prices to be inclusive of taxes and in INR only)**

(G) Annual Maintenance Contract (AMC) for ITMS System					
Sl. No	Particulars	Qty	Unit	Rate	Amount
	AMC after completion of warranty period of 1 year which includes comprehensive repair and maintenance of all equipment, hardware and software with deployment of technical mobile maintenance team, including insurance all the hardware against theft, accident, physical damage, force majeure etc.				
1	1st Year	1	Year		
2	2nd Year	1	Year		
3	3rd Year	1	Year		
4	4th Year	1	Year		
	Total. (Without Taxes)				
	Add CESS 1%				
	Total Taxes @				
	Total with CESS and applicable Taxes				
In Words					

Table 8:**(All prices to be inclusive of taxes and in INR only)**

(H) Existing HTMS O&M					
Sl. No	Particulars	Qty	Unit	Rate	Amount
Annual Maintenance Contract (AMC) for Existing HTMS System					
1	AMC charges	12	Months		
	Total. (Without Taxes)				
	Add CESS 1%				
	Total Taxes @				
	Total with CESS and applicable Taxes				
In Words					

1.21 Form 4 – Format for Performance Bank Guarantee

RFP Ref: < --- >

Date:

Bank Guarantee No.:

To

Chief Executive Officer
New Okhla Industrial Development Authority
NOIDA, Uttar Pradesh

Dear Sir/Ma'am,

PERFORMANCE BANK GUARANTEE – For <Project Name> WHEREAS

M/s. (Name of Bidder), a company registered under the Companies Act, 1956, having its registered and corporate office at (address of the Bidder), (hereinafter referred to as “our constituent”, which expression, unless excluded or repugnant to the context or meaning thereof, includes its successors and assigns), agreed to enter into a Contract dated (Hereinafter, referred to as “Contract”) with you for “Request for Proposals for Selection of Implementation Agency for Implementation of Integrated Traffic Management System (ITMS) for NOIDA, NOIDA”, in the said Contract.

We are aware of the fact that as per the terms of the Contract, M/s. (Name of Bidder) is required to furnish an unconditional and irrevocable Bank Guarantee in your favour for an amount of 10% of the Total Contract Value, and guarantee the due performance by our constituent as per the Contract and do hereby agree and undertake to pay any and all amount due and payable under this bank guarantee, as security against breach/ default of the said Contract by our Constituent.

In consideration of the fact that our constituent is our valued customer and the fact that he has entered into the said Contract with you, we, (name and address of the bank), have agreed to issue this Performance Bank Guarantee.

Therefore, we (name and address of the bank) hereby unconditionally and irrevocably guarantee you as under:

In the event of our constituent committing any breach / default of the said Contract, and which has not been rectified by him, we hereby agree to pay you forthwith on demand such sum(s) not exceeding the sum of 10 % of the Total Contract Value i.e.,.....<in words> without any demur.

Notwithstanding anything to the contrary, as contained in the said Contract, we agree that your decision as to whether our constituent has made any such default(s) / breach(es), as aforesaid and the amount or amounts to which you are entitled by reasons thereof, subject to the terms and conditions of the said Contract, will be binding on us and we shall not be entitled to ask you to establish your claim or claims under this Performance Bank Guarantee, but will pay the same forthwith on your demand without any protest or demur.

This Performance Bank Guarantee shall continue and hold good till 180 days after completion of the Contract Period, subject to the terms and conditions in the said Contract.

We bind ourselves to pay the above said amount at any point of time commencing from the date of the said Contract until 6 months after the completion of Contract Period.

We further agree that the termination of the said Agreement, for reasons solely attributable to our constituent, virtually empowers you to demand for the payment of the above said amount under this guarantee and we would honour the same without demur.

We hereby expressly waive all our rights: Requiring to pursue legal remedies against NOIDA; and For notice of acceptance hereof any action taken or omitted in reliance hereon, of any defaults under the Contract and any resentment, demand, protest or any notice of any kind.

We the Guarantor, as primary obligor and not merely Surety or Guarantor of collection, do hereby irrevocably and unconditionally give our guarantee and undertake to pay any amount you may claim (by one or more claims) up to but not exceeding the amount mentioned aforesaid during the period from and including the date of issue of this guarantee through the period.

We specifically confirm that no proof of any amount due to you under the Contract is required to be provided to us in connection with any demand by you for payment under this guarantee other than your written demand.

Any notice by way of demand or otherwise hereunder may be sent by special courier, telex, fax, registered post or other electronic media to our address, as aforesaid and if sent by post, it shall be deemed to have been given to us after the expiry of 48 hours when the same has been posted. If it is necessary to extend this guarantee on account of any reason whatsoever, we undertake to extend the period of this guarantee on the request of our constituent under intimation to you.

This Performance Bank Guarantee shall not be affected by any change in the constitution of our constituent nor shall it be affected by any change in our constitution or by any amalgamation or absorption thereof or therewith or reconstruction or winding up, but will ensure to the benefit of you and be available to and be enforceable by you during the period from and including the date of issue of this guarantee through the period.

Notwithstanding anything contained hereinabove, our liability under this Performance Guarantee is restricted to 10% of the Contract Value, and shall continue to exist, subject to the terms and conditions

contained herein, unless a written claim is lodged on us on or before the aforesaid date of expiry of this guarantee.

We hereby confirm that we have the power/s to issue this Guarantee in your favour under the Memorandum and Articles of Association / Constitution of our bank and the undersigned is / are the recipient of authority by express delegation of power/s and has/ have full power/s to execute this guarantee under the Power of Attorney issued by the bank in your favour.

We further agree that the exercise of any of your rights against our constituent to enforce or forbear to enforce or any other indulgence or facility, extended to our constituent to carry out the contractual obligations as per the said Contract, would not release our liability under this guarantee and that your right against us shall remain in full force and effect, notwithstanding any arrangement that may be entered into between you and our constituent, during the entire currency of this guarantee.

Notwithstanding anything contained herein:

Our liability under this Performance Bank Guarantee shall not exceed 10 % of the Total Contract Value. This Performance Bank Guarantee shall be valid only from the date of signing of Contract to 180 days after the End of Contract Period; and

We are liable to pay the guaranteed amount or part thereof under this Performance Bank Guarantee only and only if we receive a written claim or demand on or before 180 days after the completion of Contract Period.

Any payment made hereunder shall be free and clear of and without deduction for or on account of taxes, levies, imports, charges, duties, fees, deductions or withholding of any nature imposts.

This Performance Bank Guarantee must be returned to the bank upon its expiry. If the bank does not receive the Performance Bank Guarantee within the above-mentioned period, subject to the terms and conditions contained herein, it shall be deemed to be automatically cancelled.

This guarantee shall be governed by and construed in accordance with the Indian Laws and we hereby submit to the exclusive jurisdiction of courts of Justice in India for the purpose of any suit or action or other proceedings arising out of this guarantee or the subject matter hereof brought by you may not be enforced in or by such court.

Dated this day 20XX.

Yours faithfully,

For and on behalf of the Bank,

(Signature)

Designation

(Address of the Bank)

Note:

This guarantee will attract stamp duty as a security bond.

A duly certified copy of the requisite authority conferred on the official/s to execute the guarantee on behalf of the bank should be annexed to this guarantee for verification and retention thereof as documentary evidence in the matter.

1.22 Form 5 - Declaration of Data Security
(To be submitted on the Letterhead of the bidder)

To,

Chief Executive Officer
New Okhla Industrial Development Authority
NOIDA, Uttar Pradesh

RFP Ref: <-->

Dear Sir/Ma'am,

We..... Who are established and reputable bidder having office at..... Do hereby certify that NOIDA shall have absolute right on the digital data and output products processed / produced by us. We shall be responsible for security / safe custody of data during processing.

We also certify that the data will not be taken out of the NOIDA's premises on any media. The original input data supplied to us by other Agency/ NOIDA and output products processed / produced from input data will not be passed on to any other agency or individual other than the authorized person of NOIDA. We shall abide by all security and general instructions issued by NOIDA from time to time.

We also agree that any data from our computer system will be deleted in the presence of NOIDA official after completion of the project task.

Thanking you,

Yours faithfully,

Authorized Signatory of the IA Designation

Date:

1.23 Form 6 – Sample Tri-partite Agreement

MODEL TRIPARTITE AGREEMENT

This Agreement is entered on day of <month><year> among <<PURCHASER>> constituted by and having its registered office at (hereinafter called the “PURCHASER”), of the one part

AND

<<SUPPLIER>>, a company incorporated under the Companies Act 1956 and having its corporate office at SELECTED

IMPLEMENTATION AGENCY(SUPPLIER)FORPROJECT i.e., Partyengaged by vide LOI No: and detailed order no.

..... (herein referred to as the “Contract”) for Supply, installation, integration, testing, commissioning and facility management service of System Integration Project covering software, hardware, field survey and networking (Network services, Internet Bandwidth) and Related Services incidental thereto as specified in the Services/ Scope of Work at Section 4 of the said Contract (hereinafter referred to as “**SUPPLIER or**

<<SUPPLIER>> which expression shall unless excluded by or repugnant to the meaning or context thereof be deemed to include its successors and assigns) of the second Part.

AND

<<Name of Network Service Provider (NSP)>>a company incorporated under the Companies Act 1956 and having its corporate office at, being a TELECOM SERVICE PROVIDER/NETWORK BANDWIDTH SERVICE PROVIDER forthe

referred <<Name of Project>> engaged for Providing, Network services, Internet Bandwidth and connectivity incidental thereto as specified in the Services/ Scope of Work in the agreement between <<SUPPLIER>> and <<PURCHASER>> (hereinafter referred to as “NETWORK SERVICE PROVIDER (NSP)”) which expression shall unless excluded by or repugnant to the meaning or context thereof be deemed to include its successors and assigns) of the third Part.

<<PURCHASER>>, “<<SUPPLIER>>” and “<<Network Service Provider (NSP)>>” are individually referred as “Party” and collectively as “Parties”.

WHEREAS<<PURCHASER>>, the party of the first part has contracted<<SUPPLIER>>,the second party, for Turn Key Implementation of <<Name of Solution>> at <<Name of SUPPLIER>> (hereinafter referred to as “The Project”) vide its Contract No.....

WHEREAS as per the requirements of the project<<PURCHASER>> requires these services for successful implementation of the project.

WHEREAS<<SUPPLIER>>, in order to service its obligation under the above mentioned RFP to the full satisfaction of the PURCHASER, had proposed "<<Network Service Provider (NSP)>>" as a service provider vide their letter/ offer no dated and now agrees to associate with <<Network Service Provider (NSP)>> for execution of the part of the order, to provide support services as detailed in the purchase Order (SUPPLIER) and/or indicated in

..... <section> of this agreement to be the responsibility of <<Network Service Provider (NSP)>>, namely, related to required Bandwidth services for the project.

WHEREAS SUPPLIER has done the due diligence with respect to the capabilities, technical or otherwise, of<<NETWORKSERVICEPROVIDER(NSP)>>forprovidingtherequiredtype of connectivity and services within time frame, quality, security and reliability level as envisaged in the RFP / SRS before recommending their name.

WHEREAS the bid price quoted by<<SUPPLIER>>for networking(Network services, Internet Bandwidth and connectivity) and Related Services ("Service") at locations as specified in CONTRACT (hereinafter referred to as the "Locations") for the purpose of utilization by the

<<PURCHASER>> and their respective subsidiaries and affiliates as specified in the CONTRACT No.to <<SUPPLIER>> placed by <<PURCHASER>>, is passed through to<<NETWORK SERVICE PROVIDER (NSP)>>in accordance with the bid proposal dated submitted to <<PURCHASER>> by <<SUPPLIER>>, and the Terms & Conditions and SLA of <<PURCHASER>> with <<NETWORK SERVICE PROVIDER (NSP)>>, for carrying out the networking and Related Services.

WHEREAS <<NETWORK SERVICE PROVIDER (NSP)>> has Category 'A' ISP license having its network spread across India.

The Purchase Order placed vide/to be placed by <<PURCHASER>>to <<NETWORK SERVICE PROVIDER(NSP)>>shall form an integral part of this agreement.

<<SUPPLIER>>, shall be responsible for (i) coordinating /entering into a tripartite agreement with the NSP along with the Purchaser (ii) getting the work executed by the NSP as per the Contract for Bandwidth as well as SLA's (iii) the replacement, if any, of the NSP without changing any penalty/LD criteria. However the new NSP has to meet the qualification criteria. Any breach or failure to fulfil the obligations as mentioned in the Tripartite Agreement which has a material impact on the performance of the Contract shall be treated as a breach of the terms of 'The Contract'.

WHEREAS by virtue of this agreement, the parties <<SUPPLIER>> and <<NETWORK SERVICEPROVIDER(NSP)>>bindthemselves to the terms & conditions that are embedded in the contract between the first two parties.

Now these presents witness and it is hereby agreed by and between the parties hereto as follows:

1. APPLICATION

This Agreement details the general terms and conditions for the provision of the Services to be rendered by <<NETWORK SERVICE PROVIDER (NSP)>> [as per CONTRACT placed vide.... /to be placed by <<PURCHASER>>] and by <<SUPPLIER>> [as per CONTRACTNo.

.....with <<PURCHASER>>]. Upon signing the scope, duration and other services to be so rendered under this Agreement the parties agree to accept and be bound by these terms and conditions.

2. PROVISION OF SERVICE

- i. The provision of the Services is subject to these terms and conditions stated in this Agreement. Where <<NETWORK SERVICE PROVIDER>> shall accept the Order from <<PURCHASER>>, <<NETWORK SERVICE PROVIDER>> shall provide the Services required by <<PURCHASER>>, and by <<SUPPLIER>> on behalf of

<<PURCHASER>>, within a timeframe, quality, security and reliability level agreed withbetween<<PURCHASER>>,<<NETWORKPROVIDER>>and<<SUPPLIER>>.

The SUPPLIER shall provide <<NETWORK PROVIDER>> with a complete network diagram of the set-up along with the details of connectivity at the Locations and services will be provisioned to the <<PURCHASER>> accordingly. It is the responsibility of SUPPLIER, to ensure and of <<NETWORK SERVICE PROVIDER>> to provide proper network monitoring and network management as per SLA like uptime, proper bandwidth etc. and to submit the SLA performance report of the

<<NETWORK SERVICE PROVIDER>> to the <<PURCHASER>> on monthly/as and when required basis.

- ii. The network links will be provided by <<NETWORK SERVICE PROVIDER>> and the SUPPLIER will monitor and report any problems on behalf of <<NETWORKSERVICE PROVIDER>> to<<PURCHASER>>.
- iii. Where it is necessary, due to materiel breach by the <<NETWORK SERVICE PROVIDER>>, the <<PURCHASER>> shall instruct the <<SUPPLIER>> to replace the<<NETWORKSERVICEPROVIDER>>withanother<<NETWORKSERVICE PROVIDER>>.In case of replacement of<<NETWORK SERVICE PROVIDER>>, the SUPPLIER shall terminate forth with all agreements /contracts other arrangements with such <<NETWORK PROVIDER>> and find suitable replacement for such

<<NETWORK PROVIDER>> to the satisfaction of the <<PURCHASER>> at no additional charge. The <<SUPPLIER>> has to execute the contract as per agreed schedule and SLA and as per contractual provision entered between

<<PURCHASER>> and <<SUPPLIER>>.

iv. <<SUPPLIER>> shall ensure that Requisite Services from <<NETWORK SERVICE PROVIDER>> for project area (town) are available on time when its own system/works that are to be installed/ executed/implemented under PO no with

<<PURCHASER>>, are ready for testing & commissioning.

v. The <<NETWORK SERVICE PROVIDER>> shall not use the establishments and services installed under this agreement for organizations other than

<<PURCHASER>>.

3. SERVICE TERM

The term of the Services is initially for years (as per CONTRACT) from the date of commencement of service, and if required, thereafter, shall be extended from time to time by written consent of the parties. The Service Commencement Date shall be set forth in accordance with the Purchase Order placed vide/to be placed by <<PURCHASER>> on

<<NETWORK SERVICE PROVIDER>>.

4. TERMINATION OF SERVICE

The Termination of this Agreement and Services shall be as per provisions of Termination clause as appearing in main CONTRACT

5. RESPONSIBILITIES OF THE PARTIES

a) Responsibility of<<PURCHASER>>

- To monitor the project progress against time frame & quality and performance with, quality, security and reliability levels of required services as per agreement with <<SUPPLIER>> and <<NETWORK SERVICE PROVIDER>>
- To disburse the payment to the <<NETWORK SERVICE PROVIDER>> upon achievement of the SLA on the basis of performance reports/ SLA reports.
- To provide safe access and conditions to <<SUPPLIER>> and <<NETWORK SERVICE PROVIDER>>'s employees or appointed personnel while in the premises

b) Responsibility of<<SUPPLIER>>

- To arrange through a licensed network service provider, Network services, Internet Band width and connectivity, incidental there to as specified in the Scope of Work in the agreement between <<SUPPLIER>> and <<PURCHASER>>.
- The Suppliers over all liabilities and responsibilities shall in no case be less or more than the liabilities as mentioned in the contract, with respect to 'The Project', executed between the Supplier and the Purchaser. Ensuring Timely execution of the part of the order related to required Bandwidth for the project.
- To provide <<NETWORK SERVICE PROVIDER>> with a complete network diagram of the set-up along with the details of connectivity at the Locations and services provisioned to the <<PURCHASER>>
- Proper network monitoring and network management as per SLA like uptime, proper bandwidth etc. and submit SLA report to the PURCHASER on monthly/as and when required basis.
- To monitor and report any problems on behalf of <<NETWORK SERVICE PROVIDER>>.
- To ensure that the <<NETWORK SERVICE PROVIDER>> comply with all relevant and applicable provisions of the Contract.
- To obtain and arrange for the maintenance in full force and effect of all applicable government approvals, consents, licenses, authorizations, declarations, filings, and registrations as may be necessary and advisable for the performance of all of the terms and conditions of this Agreement.

c) Responsibility of<<SUB-CONTRACTOR>>

- To provide Network services, Internet Bandwidth and connectivity, incidental thereto as specified in the Scope of Work as per CONTRACT placed by <<PURCHASER>> to <<SUPPLIER>> and <<NETWORK SERVICE PROVIDER>>.
- To provide the Services (as per SLA) required by <<PURCHASER>>, and by <<SUPPLIER>> on behalf of <<PURCHASER>>, within the timeframe, quality,
- security and reliability level agreed with between <<PURCHASER>>, <<NETWORK SERVICE PROVIDER>> and <<SUPPLIER>>.
- Not to use the establishments and services installed under this agreement for organizations other than <<PURCHASER>>.
- To raise direct invoices against the works/services performed, as per the terms of the Purchase Order with <<PURCHASER>>.
- To ensure compliance of Indian Telecom regulation & statutory requirements while performing the works/services under this agreement.
- To obtain and arrange for the maintenance in full force and effect of all government approvals, consents, licenses, authorizations, declarations, filings and registrations as may be necessary and advisable for the performance of all of the terms and conditions of this Agreement.

6. INVOICE AND PAYMENT

- vi. <<Network Service Provider>> shall raise direct invoices against the Requisite Services so rendered, as per the terms of the Contract and <<PURCHASER>> shall directly make the payment to <<Network Service Provider>> based on the SLA report and confirmation made by <<SUPPLIER>>.
- vii. The other terms and conditions shall remain applicable as per <<PURCHASER's>> CONTRACT No. with <<SUPPLIER>>.

7. DISPUTES WITH REGARDS TO INCORRECT INVOICING

Disputes with regard to incorrect Invoicing shall be governed by <<PURCHASER's>> CONTRACT No. with <<SUPPLIER>>.

8. ACCESS TO PREMISES

<<PURCHASER>> shall allow or obtain the required permission to enable <<NETWORK SERVICE PROVIDER>> employees or authorized personnel, appointed distributors, agents or subcontractors to enter at all times during the normal working hours of <<PURCHASER>> into the premises where the Services are provided for periodical inspection with seven (7) days prior notice, installing, maintaining, replacing and removing equipment hardware and/or software prior to, during and after the provision of the Services, as well as to inspect the network and/or to the CPE or any other equipment used in or in connection with the Services. The <<PURCHASER>> shall render all assistance in this regard and shall provide safe access and conditions for <<NETWORK SERVICE PROVIDER's>> employees or appointed personnel whilst in the premises. <<NETWORK SERVICE PROVIDER's>> employees or appointed personnel shall comply with security and confidentiality policies and procedures while on the <<PURCHASER>>'s premises.

9. NOTICES

Any party may deliver notices to the other by personal delivery or by postal delivery at -

<<PURCHASER>>

<<SUPPLIER>>

<<NETWORK SERVICE PROVIDER>>.

Notices shall be deemed delivered on the date of actual receipt.

10. ENTIRE UNDERSTANDING

This Agreement constitutes the entire understanding of the parties related to the subject matter hereof. The agreement may be amended only in writing when it is signed by <<NETWORK SERVICE PROVIDER>>, <<SUPPLIER>> and <<PURCHASER>>.

11. MISCELLANEOUS

The terms of this Agreement shall not be construed to constitute a partnership, joint venture or employer/employee relationship between the parties. This Agreement along with any other relevant document constitutes the whole of the agreement and understanding between the parties about the subject matter.

- a) In the event of any provision of this Agreement being held or becoming invalid, unenforceable or illegal for any reason, this Agreement shall remain otherwise in full force apart from the said provision which will be deemed deleted. The parties shall however attempt to replace the deleted provision with a legally valid provision that

reflects the same purpose of the deleted provision to the greatest extent possible.

- b) Headings used in this Agreement are for the convenience and ease of reference only, and shall not be relevant to or affect the meaning or interpretation of this Agreement.
- c) No forbearance, relaxation or inaction by any party at any time to require the performance of any provision of this Agreement shall in any way affect, diminish, or prejudice the right of such party to require the performance of that or any other provision of this Agreement or be considered to be a waiver of any right, unless specifically agreed in writing.
- d) Each Party shall obtain and arrange for the maintenance in full force and effect of all government approvals, consents, licenses, authorizations, declarations, filings, and registrations as may be necessary and advisable for the performance of all of the terms and conditions of this Agreement.
- e) The <<Network Service Provider>> and <<SUPPLIER>> shall ensure compliance of Indian Telecom regulation & all other statutory requirements while performing the works/ services under this agreement.

12. APPLICABLE LAW

The Agreement shall be governed by and construed in accordance with Indian Law. Subject to arbitration provision stated hereinafter the Courts at NOIDA shall have the jurisdiction.

13. ARBITRATION

Any disputes which may arise out of this Agreement, and which cannot be settled in discussions or negotiations between the Parties, shall be referred to the appropriate management or higher authorities of the respective parties to resolve such dispute in good faith. In case no settlement is reached the parties shall refer it to a sole arbitrator appointed and selected by parties. Arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996 or any other subsequent modifications or enactments thereof. The venue for Arbitration proceedings shall be << Place>>. The Arbitration shall be conducted in English Language and the award shall be binding upon all Parties.

14. LIMITATION OF LIABILITY

Limitation & liability with respect to Main Agreement and also this Agreement shall be governed by <<PURCHASER's>> Contract with <<SUPPLIER>. For the sake of clarity the parties agree that this Limitation of Liability shall be a part of overall limitation of liability for the entire scope

of work under the contract, with respect to 'The Project', executed between the Supplier and the Purchaser.

IN WITNESS WHEREOF the parties hereto have executed these presents the day and year first above written.

15. SIGNED AND DELIVERED BY

(on behalf of PURCHASER) Signature

.....

in the presence of

Signature

Name&Designation.....

Name & Designation

Address

Address

SIGNED AND DELIVERED BY

in the presence of

(on behalf of SUPPLIER) Signature

.....

Signature

Name&Designation.....

Name & Designation

Address

Address

SIGNED AND DELIVERED BY

(on behalf of NETWORK SERVICE PROVIDER)

Signature

Name & Designation

Address

in the presence of

Signature

Name & Designation

Address

2. General Terms and Conditions

2.1 Definition of Terms

- 2.1.1 **“Acceptance of system”** means commissioning of project after phase-wise installation and rollout of ITMS application as defined in the RFP document. Implementation Agency should have the phase-wise approval from department for user acceptance testing. Department may issue Provisional Go-Live or phase-wise Go-Live, in case majority of the work is done to operate the system/ or its component while minor tasks (site readiness at DC/ DR, training) are pending due to dependency on the Department or otherwise.
- 2.1.2 **“Applicable Law(s)”**: Any statute, law, ordinance, notification, rule, regulation, judgment, order, decree, bye-law, approval, directive, guideline, policy, requirement or other governmental restriction or any similar form of decision applicable to the relevant party and as may be in effect on the date of the execution of this Agreement and during the subsistence thereof, applicable to the Project.
- 2.1.3 **“Bidder”** shall mean organization submitting the proposal in response to this RFP
- 2.1.4 **“Department/ Purchaser”** means the NOIDA, Govt. of Uttar Pradesh.
- 2.1.5 **“Implementation Agency”** means the Bidder who is selected by the NOIDA at the end of this RFP process. The agency will carry out all the services mentioned in the scope of work of this RFP.
- 2.1.6 **“Contract”** means the contract/ Master Service Agreement (MSA) entered into by the parties i.e. NOIDA and Implementation Agency with the entire documentation specified in the RFP.
- 2.1.7 **“Contract Value”** means the price payable to the Implementation Agency under this Contract for the full and proper performance of its contractual obligations.
- 2.1.8 **“CSP”** means the Cloud Service Provider.
- 2.1.9 **“Document”** means any embodiment of any text or image however recorded and includes any data, text, images, sound, voice, codes, databases or any other electronic documents as per current IT Act, Gol etc.
- 2.1.10 **“Effective Date”** means the date on which Lol/ LoA is issued by NOIDA or contract is signed, whichever is earlier, and executed between the Implementation Agency and department. If this Contract is executed in parts, then the date on which the last of such contracts is executed shall be construed to be the Effective Date.
- 2.1.11 **“GCC”** means General Conditions of Contract
- 2.1.12 **“Goods”** means all of the software and/or other material / items which Implementation Agency is required to supply, install and maintain under the contract.
- 2.1.13 **“Intellectual Property Rights”** means any patent, copyright, trademark, trade name, service marks, brands, proprietary information whether arising before or after the execution of this Contract and the right to ownership and registration of these rights.
- 2.1.14 **“Notice”** means a notice; or a consent, approval or other communication required to be in writing under this Contract.
- 2.1.15 **“OEM”** means the Original Equipment Manufacturer of any system / software / product.
- 2.1.16 **“Implementation Team”** means the Implementation Agency who has to provide services to the department under the scope of this Contract. This definition shall also include any and/or all of the employees of the Implementation Agency, authorized implementation agency or partners and representatives or other personnel employed or engaged either directly or indirectly by the Implementation Agency for the purpose of this Contract.
- 2.1.17 **“SCC”** means Special Conditions of Contract
- 2.1.18 **“Services”** means the work to be performed by the agency pursuant to this RFP and to the contract to be signed by the parties in pursuance of any specific assignment awarded by the NOIDA.

2.2 Interpretation

- 2.2.1 In this Contract unless a contrary intention is evident;
- 2.2.2 the clause headings are for convenient reference only and do not form part of this Contract;
- 2.2.3 unless otherwise specified a reference to a clause number is a reference to all of its sub-clauses;
- 2.2.4 the word "include" or "including" shall be deemed to be followed by "without limitation" or "but not limited to" whether or not they are followed by such phrases;
- 2.2.5 unless otherwise specified a reference to a clause, sub-clause or section is a reference to a clause, sub-clause or section of this Contract including any amendments or modifications to the same from time to time;
- 2.2.6 a word in the singular includes the plural and a word in the plural includes the singular;
- 2.2.7 a word implying a gender includes any other gender;
- 2.2.8 a reference to a person includes a partnership and a body corporate;
- 2.2.9 a reference to legislation includes legislation repealing, replacing or amending that legislation;
- 2.2.10 Where a word or phrase is given a particular meaning, it includes the appropriate grammatical forms of that word or phrase which have corresponding meanings.
- 2.2.11 In the event of an inconsistency between the terms of this Contract and the RFP and the Bid, the terms hereof shall prevail.

2.3 Conditions Precedent

- 2.3.1 This Contract is subject to the fulfilment of the following conditions precedent by Implementation Agency.
- 2.3.2 Furnishing by Implementation Agency, an unconditional and irrevocable Performance Bank Guarantee (PBG) of the Volume 1 of this RFP document and acceptable to the Department which would remain valid until such time as stipulated by the Department.
- 2.3.3 Obtaining of all statutory and other approvals required for the performance of the services under this Contract. This may include approvals/clearances, wherever applicable, that may be required for execution of this contract e.g. clearances from Government authorities for importing equipment, exemption of Tax/ Duties/ Levies, work permits/ clearances for Implementation Agency/ Implementation Agency's team, etc.
- 2.3.4 Furnish notarized copies of any/all contract(s) duly executed by Implementation Agency and its OEMs, as applicable, existing at the time of signing of this contract in relation to the Department's project. Failure to do so within stipulated time of signing of contract would attract penalty as defined in Volume II of the RFP document.
- 2.3.5 Furnishing of such other documents as the Department may specify/ demand.
- 2.3.6 The Department reserves the right to waive any or all of the conditions specified in Clause 3 above in writing and no such waiver shall affect or impair any right, power or remedy that the Department may otherwise have.
- 2.3.7 In the event that any of the conditions set forth in Clause 3 hereinabove are not fulfilled within 3 months from the date of this Contract, or such later date as may be mutually agreed upon by the parties, the Department may terminate this Contract.
- 2.3.8 In case there is a contradiction between the sections, below hierarchy of sections in order of precedence:
 - 2.3.8.1 Pre-bid clarification and Corrigendum, if any
 - 2.3.8.2 Volume III: General Terms and Conditions and Special Terms and Conditions of RFP (SCC holds precedence over GCC)
 - 2.3.8.3 Volume 2, 2A, 2B: Scope of Work and Requirement Specification along with its annexures
 - 2.3.8.4 Volume I: Invitation to Bid and Instructions to Bidders

2.4 Extension of time for fulfilment of Conditions Precedent

- 2.4.1 The Parties may, by agreement extend the time for fulfilling the Conditions Precedent and the Term of this Agreement.

2.5 Non-fulfilment of the Implementation Agency's Conditions Precedent

- 2.5.1 In the event that any of the Conditions Precedent of the Implementation Agency have not been fulfilled within 15 (fifteen) days of signing of this Agreement and the same have not been waived fully or partially by Department or its nominated agencies, this Agreement shall cease to exist;
- 2.5.2 In the event that the Agreement fails to come into effect on account of non-fulfilment of the Implementation Agency's Conditions Precedent, the Department or its nominated agencies shall not be liable in any manner whatsoever to the Implementation Agency and the Department shall forthwith forfeit the Earnest Money Deposit.
- 2.5.3 In the event that possession of any of Department or its nominated agencies facilities has been delivered to the Implementation Agency prior to the fulfilment of the Conditions Precedent, upon the termination of this Agreement such shall immediately revert to Department or its nominated agencies, free and clear from any encumbrances or claims.

2.6 Documents comprising the contract

The contract shall comprise of the following components:

- 2.6.1 Letter of Intent (LoI)
- 2.6.2 Work Order
- 2.6.3 Technical Proposal
- 2.6.4 Commercial Proposal

2.7 Scope of Work

- 2.7.1 Scope of the Contract shall be as defined in Volume 2 of the RFP in the tender.

2.8 Standards of Performance

- 2.8.1 The bidder shall perform the Services and carry out its obligations under the Contract with due diligence, efficiency and economy, in accordance with generally accepted techniques and leading practices used in the industry and with-it standards recognized by international professional bodies and shall observe sound management, engineering and security practices. It shall employ appropriate advanced technology and engineering practices and safe and effective equipment, machinery, material and methods. The bidder shall always act, in respect of any matter relating to the Contract, as faithful advisors to the Department and shall, always, support and safeguard the Department legitimate interests in any dealings with Third Parties.

2.9 Approvals and Required Consents

- 2.9.1 The Department will extend necessary support to the Implementation Agency to obtain, maintain and observe all relevant and customary regulatory and governmental licenses, clearances and applicable approvals (hereinafter the "Approvals") necessary for the Implementation Agency to provide the Services. The costs of such Approvals shall be borne by the Implementation Agency. Both parties will give each other all co-operation and information reasonably.
- 2.9.2 The Department shall also provide necessary support to Implementation Agency in obtaining the requisite approvals during project execution and implementation. In the event that any Approval is not obtained, the Implementation Agency and the Department will co-operate with each other in achieving a reasonable alternative arrangement as soon as reasonably practicable for the Department, to continue to process its work with as minimal interruption to its business operations as is Financially reasonable until such Approval is obtained, provided that the Implementation Agency shall not be relieved of its obligations to provide the Services and to achieve the Service Levels until the Approvals are obtained if and to the extent that the Implementation Agency's obligations are dependent upon such Approvals.

2.10 Implementation Agency's Obligations

- 2.10.1 Implementation Agency's obligations shall include all the activities as specified by the Department in the Scope of Work and other sections of the RFP, contract and changes thereof to enable Department to meet the objectives and operational requirements. It shall be Implementation Agency's responsibility to ensure the proper and successful implementation, performance and continued operation of the proposed solution in accordance with and in strict adherence to the terms of his Bid, the Tender and this Contract.
- 2.10.2 Implementation Agency shall achieve operational acceptance of the complete solution as defined in the RFP in accordance with the timelines specified in the implementation schedule considering the scope, design consideration and any refinement made in the agreed and finalized project plan. As soon as the System, or any subsystem, has, in the opinion of the bidder has been delivered and commissioned as per the agreement with Department, the Implementation Agency shall notify the Department in writing. Department shall, after receipt of Implementation Agency's notice, either issue an installation certificate stating that the system, or major components or subsystem has been commissioned or notify Implementation Agency of any defects and/or deficiencies, including but not limited to defects or deficiencies in interoperability or integration of the various components and/or subsystems. Implementation Agency shall take all reasonable endeavour's to promptly rectify any defects and/or deficiencies notified by the Department. Implementation Agency shall promptly carry out re-testing of the system or subsystem and notify Department about the rectification of the defects/deficiencies. The procedure shall be repeated, as necessary, until a commission/ installation certificate is issued by the Department.
- 2.10.3 In addition, Implementation Agency shall also provide services to manage and maintain the said system as per the RFP.
- 2.10.4 The Implementation Agency will be responsible for payment of all statutory levies including ESIC Contribution, PF etc. in respect of the staff engaged or deployed by him under the contract. This should comply with all statutory obligations and should be according to National Floor Level of Minimum Wage (NFLMW) and applicable laws and regulations in this regard.
- 2.10.5 The Implementation Agency shall also maintain adequate contracted strength 'on panel' to enable meeting the replacement or substitution and additional resource requirements within the time period specified in SLA's for such replacements or substitution.
- 2.10.6 Department reserves the right to interview the personnel who are proposed to be deployed as part of the project team. If found unsuitable, the Department may reject the deployment of the concerned personnel. But ultimate responsibility of the project implementation shall lie with Implementation Agency.
- 2.10.7 Department reserves the right to request changes in personnel which shall be communicated to Implementation Agency. Implementation Agency with the prior approval of the Department may make additions to the project team. Implementation Agency shall provide the Department with the resume of Key Personnel and provide such other information as the Department may reasonably require. The Department also reserves the right to interview the personnel and reject, if found unsuitable. In case of change in its team members, for any reason whatsoever, except the case of resignation, death or prolonged illness, Implementation Agency shall ensure that the exiting members are replaced with at least equally qualified and professionally competent members.
- 2.10.8 Implementation Agency shall ensure that none of the proposed Key Personnel exit from the project during Go-Live phase of the project. In such cases of exit, a penalty of INR 1 Lakhs shall be imposed on Implementation Agency per replacement.
- 2.10.9 In case of change in its team members, Implementation Agency shall ensure a reasonable amount of time overlap in activities to ensure proper knowledge transfer and handover / takeover of documents and other relevant materials between the outgoing and the new member.

- 2.10.10 Implementation Agency shall ensure that the proposed team is competent, professional and possesses the requisite qualifications and experience appropriate to the task they are required to perform under this Contract. Implementation Agency shall ensure that the services are performed through the efforts of Implementation Agency's Team, in accordance with the terms hereof and to the satisfaction of the Department. Nothing in this Contract relieves Implementation Agency from its liabilities or obligations under this Contract to provide the Services in accordance with the Department's directions and requirements and as stated in this Contract and the Bid to the extent accepted by the Department and Implementation Agency shall be liable for any non-performance, non-compliance, breach or other loss and damage resulting either directly or indirectly by or on account of its Team.
- 2.10.11 Implementation Agency shall be fully responsible for deployment / installation / and integration of all the required components and resolve any problems /issues that may arise due to integration of components.
- 2.10.12 Implementation Agency shall ensure that the OEMs supply components including associated accessories and software required and shall support Implementation Agency in the installation, integration and maintenance of these components during the entire period of contract. It must clearly be understood by Implementation Agency that warranty and AMC of the system, products and services incorporated as part of system would commence from the day of acceptance/Go-Live of system by Department for each Phase till contract period. Implementation Agency would be required to explicitly display that it has a back to back arrangement for provisioning of warranty/ AMC support till the end of contract period with the relevant OEMs.
- 2.10.13 All the product's licenses that Implementation Agency proposes should be subscription/ perpetual licenses. The perpetual license should be in the name of Implementation Agency wherever feasible for entire project duration. The software licenses shall not be restricted based on location and the Implementation Agency should have the flexibility to use the software licenses for other requirements if required, provided the same does not violate the usage rights agreed with the original manufacturer.
- 2.10.14 The Department reserves the right to review the terms of the Warranty and Annual Maintenance Agreements entered into between Implementation Agency and OEMs and no such agreement/contract shall be executed, amended, modified and/or terminated without the prior written consent of the Department. An executed copy of each of such agreements/contracts shall, immediately upon execution be submitted by Implementation Agency to the Department. Alternately, the Implementation Agency can also submit an undertaking on company letterhead in this regard (specifying broadly the terms of the Warranty and Annual Maintenance Agreements entered into between the Implementation Agency and OEM) signed by the Authorized Signatory.
- 2.10.15 Implementation Agency shall ensure that none of the components and sub-components is declared end-of-sale or end-of-support by the respective OEM at the time of submission of bid and for the contract period. If the OEM declares any of the products/ solutions end-of-sale or end-of-support subsequently, the Implementation Agency shall ensure that the same is supported by the respective OEM for contract period. Implementation Agency shall submit as part of the bid an undertaking on company letterhead in this regard signed by the Authorized Signatory.
- 2.10.16 If a product is de-supported by the OEM for any reason whatsoever, from the Successfully Commissioning till the end of contract, Implementation Agency should replace the products/ solutions with an alternate that is acceptable to the Department at no additional cost to the Department and without causing any performance degradation.
- 2.10.17 Implementation Agency shall ensure that the OEMs provide the support and assistance to Implementation Agency in case of any problems / issues arising due to integration of components supplied by him with any other component(s)/ product(s) under the purview of the overall solution. If the same is not resolved for any reason whatsoever, Implementation Agency shall replace the required component(s) with an equivalent or better substitute that is acceptable to Department without any additional cost to the Department and without impacting the performance of the solution in any manner whatsoever.

- 2.10.18 Implementation Agency shall ensure that the OEMs supply and/or install all type of updates, patches, fixes and/or bug fixes for the firmware or software from time to time at no additional cost to the Department.
- 2.10.19 Implementation Agency shall ensure the documentation and training services associated with the components shall be provided by the OEM partner or OEM's certified training partner without any additional cost to the Department.
- 2.10.20 The training has to be conducted using official OEM course curriculum mapped with the hardware / software Product's to be implemented in the project.
- 2.10.21 Implementation Agency's representative(s) shall have all the powers requisite for the execution of scope of work and performance of services under this contract. Implementation Agency's representative(s) shall liaise with the Department's representative for the proper coordination and timely completion of the works and on any other matters pertaining to the works. Implementation Agency shall extend full co-operation to Department's representative in the manner required by them for supervision/ inspection/ observation of the goods/ material, procedures, performance, progress, reports and records pertaining to the works. He shall also have complete charge of Implementation Agency's personnel engaged in the performance of the works and to ensure compliance of rules, regulations and safety practice. Implementation Agency and any of its representatives shall also cooperate with Implementation agency/Vendor of the Department working at the Department's office location and field locations. Such Implementation Agency's representative(s) shall be available to the Department's representative during the execution of works.
- 2.10.22 Implementation Agency shall be responsible on an ongoing basis for coordination with other vendors and agencies of the Department in order to resolve issues and oversee implementation of the same. Implementation Agency shall also be responsible for resolving conflicts between vendors in case of borderline integration issues.
- 2.10.23 Implementation Agency resources shall be required to work from the Department's offices during the contract period.

2.11 Start of Installation

- 2.11.1 Before commencement of installation at junctions, red lights, roads and Command control centre, Bidder shall carry out proper planning and co-ordination with other vendor's viz. Command Centre, CSP, and Network / Bandwidth Provider in order to prepare the installation plan and detailed design / architectural design documents.
- 2.11.2 The Bidder shall submit plan and design documents thus developed for approval by the Department.
- 2.11.3 After obtaining the approval from the Department, the Bidder shall commence the installation.
- 2.11.4 The Department may revise the list of junctions/ locations during the time of installation. The revision may be within the range of 10-20% of actual list given in the Volume II of the RFP document.
- 2.11.5 Prior to taking up installation of any major component of work, the Bidder shall submit to Department his/her proposed procedures and obtain Department's approval in writing.

2.12 Reporting Progress

- 2.12.1 Implementation Agency shall monitor progress of all the activities related to the execution of this contract and shall submit to the Department, progress reports with reference to all related work, milestones and their progress during the implementation phase.
- 2.12.2 Formats for all above mentioned reports and their dissemination mechanism shall be discussed and finalized along with project plan. The Department on mutual agreement between both parties may change the formats, periodicity and dissemination mechanism for such reports.
- 2.12.3 Periodic meetings shall be held between the representatives of the Department and Implementation Agency once in every 15 (fifteen) days during the implementation phase to discuss the progress of implementation. After the implementation phase is over, the meeting shall be held as an ongoing basis, as desired by Department, to discuss the performance of the contract.
- 2.12.4 Implementation Agency shall ensure that the respective solution teams involved in the execution of work are part of such meetings.
- 2.12.5 Review committees involving representative of the Department and senior officials of Implementation Agency shall be formed for this project. These committees shall meet at intervals, as decided by the Department later, to oversee the progress of the implementation.
- 2.12.6 All the goods, services and manpower to be provided / deployed by Implementation Agency under the Contract and the manner and speed of execution and maintenance of the work and services are to be conducted in a manner to the satisfaction of Department's representative in accordance with the Contract.
- 2.12.7 The Department reserves the right to inspect and monitor/ assess the progress/ performance of the work / services at any time during the Contract. The Department may demand and upon such demand being made, Implementation Agency shall provide documents, data, material or any other information which the Department may require, to enable it to assess the progress/ performance of the work / service.
- 2.12.8 At any time during the course of the Contract, the Department shall also have the right to conduct, either itself or through another agency as it may deem fit, an audit to monitor the performance by Implementation Agency of its obligations/ functions in accordance with the standards committed to or required by the Department and Implementation Agency undertakes to cooperate with and provide to the Department / any other agency appointed by the Department, all Documents and other details as may be required by them for this purpose. Such audit shall not include Implementation Agency's books of accounts.
- 2.12.9 Should the rate of progress of the works or any part of them at any time fall behind the stipulated time for completion or is found to be too slow to ensure completion of the works by the stipulated time, or is in deviation to Tender requirements/ standards, the Department's representative shall so notify Implementation Agency in writing.
- 2.12.10 Implementation Agency shall reply to the written notice giving details of the measures he proposes to take to expedite the progress to complete the works by the prescribed time or to ensure compliance to RFP requirements. Implementation Agency shall not be entitled to any additional payment for taking such steps. If at any time it should appear to the Department or Department's representative that the actual progress of work does not conform to the approved plan Implementation Agency shall produce at the request of the Department's representative a revised plan showing the modification to the approved plan necessary to ensure completion of the works within the time for completion or steps initiated to ensure compliance to the stipulated requirements
- 2.12.11 The submission seeking approval by the Department or Department's representative of such plan shall not relieve Implementation Agency of any of his duties or responsibilities under the Contract.

- 2.12.12 In case during execution of works, the progress falls behind schedule or does not meet the Tender requirements, Implementation Agency shall deploy extra manpower/ resources to make up the progress or to meet the RFP requirements. Plan for deployment of extra man power/ resources shall be submitted to the Department for its review and approval. All time and cost effect in this respect shall be borne, by Implementation Agency within the contract value

2.13 Knowledge of Department Site conditions

- 2.13.1 The Bidder shall be deemed to have knowledge of the Department Sites and its surroundings and information available in connection therewith and to have satisfied itself the form and nature thereof including, the data contained in the Bidding Documents, the physical and climatic conditions, the quantities and nature of the works and materials necessary for the completion of the works, the means of access, etc. and in general to have obtained itself all necessary information of all risks, contingencies and circumstances affecting his obligations and responsibilities therewith under the Contract and his ability to perform it. However, if during pre-installation survey / during delivery or installation, the Bidder detects physical conditions and/or obstructions affecting the work, the Bidder shall take all measures to overcome them.

2.14 Project Plan

- 2.14.1 Within 15 (fifteen) calendar days of the contract/ Issuance of LOI, Implementation Agency shall submit to the Department for its approval a detailed Project Plan with details of the project showing the sequence, procedure and method in which he proposes to carry out the works. The Plan so submitted by Implementation Agency shall conform to the requirements and timelines specified in the Contract. The Department and Implementation Agency shall discuss and agree upon the work procedures to be followed for effective execution of the works, which Implementation Agency intends to deploy and shall be clearly specified. The Project Plan shall include but not limited to project organization, communication structure, proposed staffing, roles and responsibilities, processes and tool sets to be used for quality assurance, security and confidentiality practices in accordance with industry best practices, project plan and delivery schedule in accordance with the Contract. Approval by the Department's Representative of the Project Plan shall not relieve Implementation Agency of any of his duties or responsibilities under the Contract.
- 2.14.2 If Implementation Agency's work plans necessitate a disruption/ shutdown in Department's operation, the plan shall be mutually discussed and developed to keep such disruption/shutdown to the barest unavoidable minimum. Any time and cost arising due to failure of Implementation Agency to develop/adhere such a work plan shall be to the Implementation Agency's account.

2.15 Bidder's Organization

- 2.15.1 The Bidder should provision for manpower resources required for execution of work and provision of services under this contract specified in scope of work as specified in Section 10 of the RFP.
- 2.15.2 The Bidder should to the best of his efforts, avoid any change in the organization structure proposed for execution of this contract or replacement of any manpower resource appointed. If the same is however unavoidable, the Bidder shall promptly inform the Department in writing, and the same shall require subsequent approval by the Department. In case of replacement of any manpower resource, the Bidder should ensure efficient knowledge transfer from the outgoing resource to the incoming resource and adequate hand-holding period and training for the incoming resource to maintain the continued level of service.
- 2.15.3 All manpower resources deployed by the Bidder for execution of this contract must strictly adhere to the attendance reporting procedures and make their services available as agreed upon for the entire reporting time period at the identified junctions, command center, Data Centre Sites, Department's office location and any other locations covered under this project.
- 2.15.4 The Bidder shall provide at the respective Data centre sites necessary supervision during the execution of work and as long thereafter as the Department may consider necessary for the proper fulfilment of the Bidder's obligations under the Contract. The Bidder or his competent and authorized representative(s) shall be constantly present at the respective Data centre Sites during agreed time for supervision. The Bidder shall authorize his representative to receive directions and instructions from the Department's Representative.
- 2.15.5 The Bidder shall be responsible for the deployment, transportation, accommodation and other requirements of all its employees required for the execution of the work and provision of services for all costs/charges in connection thereof.
- 2.15.6 The Bidder shall provide and deploy, at the Cloud data center and Department's office locations for carrying out the work, only those manpower resources who are qualified/skilled and experienced in their respective trades and who are competent to deliver in a proper and timely manner the work they are required to perform or to manage/supervise the work
- 2.15.7 The Department's Representative may at any time object to and require the Bidder to remove forthwith from the junctions, command centers, Cloud data center, Department's office locations and any other location covered under this project and any authorized representative or employee of the Bidder or any person(s) of the Bidder's team, if, in the opinion of the Department's Representative the person in question has misconduct or his / her deployment is otherwise considered undesirable by the Department's representative. The Bidder shall forthwith remove and shall not again deploy the person without the written consent of the Department's Representative.
- 2.15.8 The Department's Representative may at any time object to and request the Bidder to remove from the identified Junctions, Command Center, cloud data centre, and Department's office locations or any other locations covered under this project, any of Bidder's authorized representative including any employee of the Bidder or his team or any person(s) deployed by Bidder or his team for professional incompetence or negligence or for being deployed for work for which he is not suited. The Bidder shall consider the Department's Representative request and may accede to or disregard it. The Department's Representative, having made a request, as aforesaid in the case of any person, which the Bidder has disregarded, may in the case of the same person at any time but on a different occasion, and for a different instance of one of the reasons referred to above in this Clause object to and require the Bidder to remove that person from deployment on the work, which the Bidder shall then forthwith do and shall not again deploy any person so objected to on the work or on the sort of work in question (as the case may be) without the written consent of the Department's representative.
- 2.15.9 The Department's representative shall state to the Bidder in writing his reasons for any request or requirement pursuant to this Clause.
- 2.15.10 The Bidder shall promptly replace every person removed, pursuant to this section, with a competent substitute, and at no extra cost to the Department.

2.16 Adherence to safety procedures, rules regulations and restriction

- 2.16.1 The Bidder's Team shall comply with the provision of all laws including labour laws, rules, regulations and notifications issued there under from time to time. All safety and labour laws enforced by statutory agencies and by Department shall be applicable in the performance of this Contract and Bidder's Team shall abide by these laws.
- 2.16.2 Access to the command control and Data centre Sites shall be strictly restricted. No access to any person except the essential members of the Bidder's Team who are genuinely required for execution of work or for carrying out Management/ maintenance who have been explicitly authorised by the Department shall be allowed entry to the Data centre Sites. Even if allowed, access shall be restricted to the pertaining equipment of the Department only. The Bidder shall maintain a log of all activities carried out by each of its team personnel.
- 2.16.3 The Bidder shall take all measures necessary or proper to protect the personnel, work and facilities and shall observe all reasonable safety rules and instructions. The Bidder's Team shall adhere to all security requirement/regulations of the Department during the execution of the work. Department's employee also shall comply with safety procedures/policy.
- 2.16.4 The Bidder shall report as soon as possible any evidence, which may indicate or is likely to lead to an abnormal or dangerous situation and shall take all necessary emergency control steps to avoid such abnormal situations.

2.17 Statutory Requirements

- 2.17.1 During the tenure of this Contract nothing shall be done by Implementation Agency or its team/personnel and its team in contravention of any law, act and/ or rules/regulations, there under or any amendment thereof governing inter-alia customs, stowaways, foreign exchange etc. and shall keep Department indemnified in this regard.

2.18 Department's Obligations

- 2.18.1 Department or his/her nominated representative shall act as the nodal point for implementation of the contract and for issuing necessary instructions, approvals, commissioning, acceptance certificates, payments etc. to the Bidder.
- 2.18.2 Department shall ensure that timely approval is provided to the Bidder as and when required, which may include approval of project plans, implementation methodology, design documents, specifications, or any other document necessary in fulfilment of this contract.
- 2.18.3 Department's representative shall interface with the Bidder, to provide the required information, clarifications, and to resolve any issues as may arise during the execution of the Contract. Department shall provide adequate cooperation in providing details, coordinating and obtaining of approvals from various governmental agencies, in cases, where the intervention of the Department is proper and necessary.
- 2.18.4 Department may provide on Bidder's request, particulars / information or documentation that may be required by the Bidder for proper planning and execution of work and for providing services covered under this contract and for which the Bidder may have to coordinate with respective vendors.
- 2.18.5 Department shall provide to Implementation Agency (IA) only sitting space and basic infrastructure like fan, AC, chair, table etc. and not including, stationery and other consumables at the Department's office locations or project locations provided by Department.
- 2.18.6 Department reserves the right to procure the software and other items based on actual deployment and AMC shall be applicable whenever the same are procured and deployed and commissioned till end of the contract.
- 2.18.7 Department, to support Project Management Committee shall setup a Project Monitoring Unit which will assist Department for the following (but not limited to):
 - i. Reviewing the progress of the project and participate in status review meeting with Department and IA

- ii. Co-ordination with various stakeholders
 - iii. Monitor project milestones with respect to implementation
 - iv. Review of deliverables/ work products submitted by IA
 - v. Review of service level adherence for the implementation as per the defined SLAs
 - vi. Effective planning for knowledge transfer and training on the implemented ITMS to user and monitoring of training delivery and feedback
- 2.18.8 Site Not Ready: Department hereby agrees to make the project site(s) ready as per the agreed specifications, within the agreed timelines. Department agrees that Implementation Agency shall not be in any manner liable for any delay arising out of Department's failure to make the site ready within the stipulated period.

2.19 Payments

- 2.19.1 Department shall make payments to the Bidder at the times and in the manner set out in the Payment schedule as specified in Clause 6 of Volume 2A of the RFP. Department will make all efforts to make payments to the Bidder within 30 (thirty) days of receipt of invoice(s) and all necessary supporting documents.
- 2.19.2 All payments agreed to be made by Department to the Bidder in accordance with the Bid shall be inclusive of all statutory levies, duties, taxes and other charges whenever levied/applicable, if any, and Department shall not be liable to pay any such levies/other charges under or in relation to this Contract and/or the Services.
- 2.19.3 No invoice for extra work/change order on account of change order will be submitted by the Bidder unless the said extra work /change order has been authorized/approved by the Department in writing in accordance with Change Control Note (Annexure 10 of this section of the RFP)
- 2.19.4 In the event of Department noticing at any time that any amount has been disbursed wrongly to the Bidder or any other amount is due from the Bidder to the Department, the Department may without prejudice to its rights recover such amounts by other means after notifying the Bidder or deduct such amount from any payment falling due to the Bidder. The details of such recovery, if any, will be intimated to the Bidder. The Bidder shall receive the payment of undisputed amount under subsequent invoice for any amount that has been omitted in previous invoice by mistake on the part of the Department or the Bidder.
- 2.19.5 All payments to the Bidder shall be subject to the deductions of tax at source under Income Tax Act, and other taxes, and deductions as provided for under any law, rule or regulation. All costs, damages or expenses which Department may have paid or incurred, for which under the provisions of the Contract, the Bidder is liable, the same shall be deducted by Department from any dues to the Bidder. All payments to the Bidder shall be made after making necessary deductions as per terms of the Contract and recoveries towards facilities, if any, provided by the Department to the Bidder on chargeable basis.

2.20 Intellectual Property Rights

- 2.20.1 Products and fixes: All products and related solutions and fixes provided pursuant to this Contract shall be licensed according to the terms of the license agreement packaged with or otherwise applicable to such product, the ownership of which shall continue to vest with the product owner. Implementation Agency would be responsible for arranging any licenses associated with products. "Product" means any computer code, web-based services, or materials comprising commercially released, pre-release or beta products (whether licensed for a fee or no charge) and any derivatives of the foregoing which are made available to Department for license which is published by product owner or its affiliates, or a third party. "Fixes" means product fixes that are either released generally (such as commercial product service packs) or that are provided to Implementation Agency when performing services (such as workarounds, patches, bug fixes, beta fixes and beta builds) and any derivatives of the foregoing.

- 2.20.2 Bespoke development: Subject to the provisions of Clause 1.21.3 and 1.21.4, upon payment, the IPR rights for any bespoke development done during the implementation of the project will lie exclusively with the Department.
- 2.20.3 Pre-existing work: All IPR including the source code and materials developed or otherwise obtained independently of the efforts of a Party under this Contract ("pre-existing work") including any enhancement or modification thereto shall remain the sole property of that Party. During the performance of the services for this Contract, each party grants to the other party a non-exclusive license to use, reproduce and modify any of its pre-existing work provided to the other party solely for the performance of such services for duration of the Term of this Contract. Except as may be otherwise explicitly agreed to in a statement of services, upon payment in full, the Implementation Agency should grant department a non-exclusive, perpetual, fully paid-up license to use the pre-existing work in the form delivered to department as part of the service or deliverables only for its internal business operations. Under such license, either of parties will have no right to sell the pre-existing work of the other party to a Third Party. department's license to pre-existing work is conditioned upon its compliance with the terms of this RFP and the perpetual license applies solely to the pre-existing work that Implementation Agency leaves with Department at the conclusion of performance of the services
- 2.20.4 Residuals: In no event shall Implementation Agency be precluded from independently developing for itself, or for others, anything, whether in tangible or non-tangible form, which is competitive with, or similar to, the deliverables, set-out in this RFP or Annexure. In addition, subject to the confidentiality obligations, Implementation Agency shall be free to use its general knowledge, skills and experience, and any ideas, concepts, know-how, and techniques that are acquired or used in the course of providing the Services.

2.21 Taxes

- 2.21.1 The Department or its nominated agencies shall be responsible for withholding taxes from the amounts due and payable to the IA wherever applicable. The IA shall pay for all other taxes in connection with the Agreement, SLA, scope of work and any other engagement required to be undertaken as a part of the Agreement, including, but not limited to, property, sales, use, excise, value-added, goods and services, consumption and other similar taxes or duties.
- 2.21.2 A certificate shall be provided by the Department to the Bidder for any tax deducted at source
- 2.21.3 The Department or its nominated agencies shall provide Implementation agency with the original tax receipt of any withholding taxes paid by Department or its nominated agencies on payments under this Agreement. The Implementation Agency agrees to reimburse and hold the Department or its nominated agencies harmless from any deficiency including penalties and interest relating to taxes that are its responsibility under this paragraph. For purposes of this Agreement, taxes shall include taxes incurred on transactions between and among the Department or its nominated agencies and the Implementation Agency.
- 2.21.4 If, after the date of Agreement, there is any change of rate of levy under the existing applicable laws of India with respect to taxes and duties, which are directly payable by the Department for providing the goods and services i.e. service tax or any such other applicable tax from time to time, which increase or decreases the cost incurred by the Implementation Agency in performing the Services, then the remuneration and reimbursable expense otherwise payable to the Implementation Agency under this Agreement shall be increased or decreased accordingly by correspondence between the Parties hereto, and corresponding adjustments shall be made. However, in case of any new or fresh tax or levy imposed after submission of the proposal the Implementation Agency shall be entitled to reimbursement on submission of proof of payment of such tax or levy.
- 2.21.5 The Parties shall cooperate to enable each Party to accurately determine its own tax liability and to minimize such liability to the extent legally permissible. In connection therewith, the Parties shall provide each other with the following:
- i. Any resale certificates;

- ii. Any relevant information regarding out-of-state or use of materials, equipment or services; and
 - iii. Any direct pay permits, exemption certificates or information reasonably requested by the other Party.
- 2.21.6 The Bidder shall bear all personnel taxes levied or imposed on its personnel, or any other member of the Bidder's Team, etc. on account of payment received under this Contract. The Bidder shall bear all corporate taxes, levied or imposed on the Bidder on account of payments received by it from the Department for the work done under this Contract.
- 2.21.7 The Bidder shall bear all taxes and duties etc. levied or imposed on the Bidder under the Contract including but not limited to GST and all Income Tax levied under Indian Income Tax Act – 1961 or any amendment thereof during the entire contract period, i.e., on account of material supplied and services rendered and payments received by him from the Department under the Contract. It shall be the responsibility of the Bidder to submit to the concerned Indian authorities the returns and all other connected documents required for this purpose. The Bidder shall also provide the Department such information, as it may be required in regard to the Bidder's details of payment made by the Department under the Contract for proper assessment of taxes and duties. The amount of tax withheld by the Department shall at all times be in accordance with Indian Tax Law and the Department shall promptly furnish to the Bidder original certificates for tax deduction at source and paid to the Tax Authorities.
- 2.21.8 Any increase or decrease in the rates of the applicable taxes or any new levy on account of changes in law shall be adjusted such that payment to be made by the Department is increased / decreased accordingly and corresponding adjustments shall be made. In case of any new or fresh tax or levy imposed after submission. Of the proposal, the Bidder shall be entitled to reimbursement on submission of proof of payment of such tax or levy.
- 2.21.9 The Bidder agrees that he and his Team shall comply with the Indian Income Tax act in force from time to time and pay Indian Income Tax, as may be imposed / levied on them by the Indian Income Tax Authorities, for the payments received by them for the works under the Contract. Should the Bidder fail to submit returns/pay taxes in times as stipulated under applicable Indian/State Tax Laws and consequently any interest or penalty is imposed by the concerned authority, the Bidder shall pay the same? The Bidder shall indemnify Department against any and all liabilities or claims arising out of this Contract for such taxes including interest and penalty by any such Tax Authority may assess or levy against the Department/Bidder.
- 2.21.10 The Department shall if so required by applicable laws in force, at the time of payment, deduct income tax payable by the Bidder at the rates in force, from the amount due to the Bidder and pay to the concerned tax authority directly.

2.22 Limitation of Liability

Limitation of Implementation Agency's Liability towards the Department:

Neither Party shall be liable to the other Party for any indirect or consequential loss or damage (including loss of revenue and profits) arising out of or relating to the Contract.

- 2.22.1 Except in case of gross negligence or wilful misconduct on the part of the Implementation Agency or on the part of any person or company acting on behalf of the Implementation Agency in carrying out the Services, the Implementation Agency, with respect to damage caused by the Implementation Agency to Department property, shall not be liable to Department:
- i. for any indirect or consequential loss or damage; and
 - ii. for any direct loss or damage, it shall not exceed one time the total contract value payable under this Agreement.

2.23 Warranty

- 2.23.1 Standard: The Implementation Agency warrants that the Project, including all the system(s), materials and goods supplied pursuant to the Agreement, shall be free from any defect or deficiency in the material, design, engineering, and workmanship that prevent the system and/or any of its systems(s) from fulfilling the technical requirements or that limit in a material fashion the performance, reliability, or extensibility of the system and/or any of its sub-system(s). Financial warranty provisions of products supplied under the Agreement shall apply to the extent they do not conflict with the provisions of this Agreement.
- 2.23.2 The IA also warrants that the products, materials and other goods supplied under the Agreement are new, unused and incorporate all recent improvements in design that materially affect the system's or subsystem's ability to fulfil the technical requirements specified in the RFP.
- 2.23.3 In addition, the IA warrants that: (i) all Goods components to be incorporated into the System form part of the IA and/or OEM's current product lines.
- 2.23.4 The warranty period shall commence from the date of successful commissioning/Go-Live of the project or of any major component or subsystem for which phased successfully commissioning/Go-Live is provided for in the Agreement and shall extend till the expiry of the contract.
- 2.23.5 Department should approve signoff within 30 (thirty) days from the submission of deliverables for successful commissioning/ phased successful commissioning (as relevant, depending on project requirement) by the implementation agency.
- 2.23.6 If during the warranty period any defect or deficiency is found in the material, design and performance/workmanship of the Project and other Services provided by the Implementation Agency, the Implementation Agency shall promptly, in consultation and agreement with Department, and at the Implementation Agency's sole cost repair, replace, or otherwise make good (as the Implementation Agency shall, at its discretion, determine) such default, defect or deficiency as well as any damage to the system caused by such default, defect or deficiency. Any defective component, excluding hard disks, that has been replaced by the Implementation Agency shall remain the property of the Implementation Agency except the data & logs which has to be transferred to the Department who will be the owner of any data captured under this project.
- 2.23.7 The IA may, with the consent of the Department, remove from the site any product and other goods that are defective, if the nature of the defect, and/or any damage to the System caused by the defect, is such that repairs cannot be expeditiously carried out at the site. If the repair, replacement, or making good is of such a character that it may affect the efficiency of the System, the Department may give the IA notice requiring that tests of the defective part be made by the IA immediately upon completion of such remedial work, whereupon the IA shall carry out such tests. If such part fails the tests, the IA shall carry out further repair, replacement, or making good (as the case may be) until that part of the System passes such tests. The tests shall be agreed upon by the Department and the Supplier.
- 2.23.8 If the IA fails to commence the work necessary to remedy such defect or any damage to the System caused by such defect within a reasonable time period, the Department may, following notice to the IA, proceed to do such work or contract a third party (or parties) to do such work, and the reasonable costs incurred by the Department in connection with such work shall be paid to the Department by the IA or may be deducted by the Department from any amount due to the IA.

- 2.23.9 If the System or any of its sub-systems cannot be used by reason of such default, defect or deficiency and/or making good of such default, defect or deficiency, attributable to IA, the warranty period for the Project shall be extended by a period equal to the period during which the Project or any of its system could not be used by the Department because of such defect and/or making good of such default, defect or deficiency. For reasons not attributable to IA, the IA shall not be liable.
- 2.23.10 Implied Warranty: The warranties provided herein are in lieu of all other warranties, both express and implied, and all other warranties, including without limitation that of merchantability or fitness for intended purpose is specifically disclaimed.

2.24 Term and Extension of the Contract

- 2.24.1 The term of this Contract shall be initially for a period of 5 (five) years from the date of signing of contract or Issuance of LOI, whichever is earlier.
- 2.24.2 If the delay occurs due to circumstances such as strikes, lockouts, fire, accident, defective materials, delay in approvals or any cause whatsoever beyond the reasonable control of the Bidder, a reasonable extension of time shall be granted.
- 2.24.3 The Department reserves the right to extend the term for a period or periods of up to 2 (two) years. Such extension or extensions on the same terms and conditions, subject to the Department's obligations at law. Where the Department is of the view that no further extension of the term be granted to the Bidder, the Department shall notify the Bidder of its decision at least 3 (three) months prior to the expiry of the Term. Upon receipt of such notice, the Bidder shall continue to perform all its obligations hereunder, until such reasonable time beyond the Term of the Contract at mutually agreed rate within which, the Department shall either appoint an alternative agency/Bidder or create its own infrastructure to operate such Services as are provided under this Contract.

2.25 Dispute Resolution/ Arbitration

- 2.25.1 The Contract shall be governed by and construed in accordance with the laws of India, without giving effect to conflict of law rules. The parties expressly agree to exclude the application of the U.N. Convention on Contracts for the International Sale of Goods (1980) to this Contract and the performance of the parties contemplated under this Contract, to the extent that such convention might otherwise be applicable.
- 2.25.2 Any dispute arising out of or in connection with the Contract or the SLA shall in the first instance be dealt with in accordance with the escalation procedure mutually agreed between the Department and the Implementation agency.
- 2.25.3 In case the escalations do not help in resolution of the problem within 3 (three) weeks of escalation, both the parties should agree on a mediator for communication between the two parties. The process of the mediation would be as follows:
- 2.25.4 Aggrieved party should refer the dispute to the identified mediator in writing, with a copy to the other party. Such a reference should contain a description of the nature of the dispute, the quantum in dispute (if any) and the relief or remedy sought suitable.
- 2.25.5 The mediator shall use his best endeavours to conclude the mediation within a certain number of days of his appointment.
- 2.25.6 If no resolution can be reached through mutual discussion or mediation within 30 (thirty) days then the matter should be referred to Experts for advising on the issue.
- 2.25.7 In case the mediation does not help in resolution and it requires expertise to understand an issue, a neutral panel of 3 experts, agreeable to both parties should be constituted. The process of the expert advisory would be as follows:
- 2.25.8 Aggrieved party should write to the other party on the failure of previous alternate dispute resolution processes within the timeframe and requesting for expert advisory. This is to be sent with a copy to the mediator.
- 2.25.9 Both parties should thereafter agree on the panel of experts who are well conversant with the issue under dispute.

- 2.25.10 The expert panel shall use his best endeavours to provide a neutral position on the issue. If no resolution can be reached through the above means within 30 (thirty) days then the matter should be referred to Arbitration. Any dispute or difference whatsoever arising between the parties to this Contract out of or relating to the construction, meaning, scope, operation or effect of this Contract or the validity of the breach thereof shall be referred to a sole Arbitrator to be appointed by mutual consent of both the parties herein. If the parties cannot agree on the appointment of the Arbitrator within a period of one month from the notification by one party to the other of existence of such dispute, then the Arbitrator shall be appointed by the Allahabad High Court. The provisions of the Arbitration and Conciliation Act, 1996 will be applicable and the award made there under shall be final and binding upon the parties hereto, subject to legal remedies available under the law. Such differences shall be deemed to be a submission to arbitration under the Indian Arbitration and Conciliation Act, 1996, or of any modifications, Rules or re-enactments thereof. The Arbitration proceedings will be held at Noida, India. Any legal dispute will come under the sole jurisdiction of District court G.B. Nagar, India.
- 2.25.11 Compliance with laws: Each party will comply with all applicable export and import laws and regulations.
- 2.25.12 Risk of Loss: For each hardware item, Implementation Agency bears the risk of loss or damage up to the time it is delivered to the Implementation/Department-designated carrier for shipment to Department or Department's designated location.
- 2.25.13 Third party components: Implementation Agency will provide all third-party components solely on a pass-through basis in accordance with the relevant third-party terms & conditions.

2.26 Conflict of interest

- 2.26.1 A Bidder shall not have a conflict of interest that may affect the Selection Process or the Solution/Services delivery (the "Conflict of Interest"). Any Bidder found to have a Conflict of Interest shall be disqualified. In the event of disqualification, the Department shall forfeit and appropriate the EMD, if available, as mutually agreed genuine pre-estimated compensation and damages payable to the Department for, inter alia, the time, cost and effort of the Department including consideration of such Bidder's Proposal, without prejudice to any other right or remedy that may be available to the Department hereunder or otherwise.
- 2.26.2 The Department requires that the Implementation Agency provides solutions/Services which at all times hold the Department's interest paramount, avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Systems Implementation Agency shall not accept or engage in any assignment that would be in conflict with its prior or current obligations to other clients, or that may place it in a position of not being able to carry out the assignment in the best interests of the Department.

2.27 Trademarks, Publicity

- 2.27.1 Neither Party may use the trademarks of the other Party without the prior written consent of the other Party except that Implementation agency may, upon completion, use the Project as a reference for credential purpose. Except as required by law or the rules and regulations of each stock exchange upon which the securities of one of the Parties is listed, neither Party shall publish or permit to be published either alone or in conjunction with any other person any press release, information, article, photograph, illustration or any other material of whatever kind relating to this Agreement, the SLA or the business of the Parties without prior reference to and approval in writing from the other Party, such approval not to be unreasonably withheld or delayed provided however that Implementation Agency may include Department or its client lists for reference to third parties subject to the prior written consent of Department not to be unreasonably withheld or delayed.

2.28 Force Majeure

- 2.28.1 Force Majeure shall not include any events caused due to acts or omissions of the Implementation Agency resulting in a breach or contravention of any of the terms of the Contract and/or the Implementation Agency's Bid. It shall also not include any default on the part of the Implementation Agency due to its negligence or failure to implement the stipulated or proposed precautions, as were required to be taken under the Contract.
- 2.28.2 The failure or occurrence of a delay in performance of any of the obligations of either party shall constitute a Force Majeure event only where such failure or delay could not have reasonably been foreseen i.e. war, or hostility, acts of the public enemy, civil commotion, sabotage, fire, floods, explosions, epidemics, quarantine restriction, strikes, lockouts or act of God (hereinafter referred to as events), or where despite the presence of adequate and stipulated safeguards the failure to perform obligations has occurred at any location in scope. In such an event, the affected party shall inform the other party in writing within five days of the occurrence of such event. Any failure or lapse on the part of the Implementation Agency in performing any obligation as is necessary and proper, to negate the damage due to projected force majeure events or to mitigate the damage that may be caused due to the above-mentioned events or the failure to provide adequate disaster management or recovery or any failure in setting up a contingency mechanism would not constitute force majeure, as set out above.
- 2.28.3 In case of a Force Majeure, all Parties will endeavour to agree on an alternate mode of performance in order to ensure the continuity of service and implementation of the obligations of a party under the Contract and to minimize any adverse consequences of Force Majeure.

2.29 Delivery

- 2.29.1 The Bidder shall bear the cost for packing, transport, insurance and delivery of all the goods as applicable for this project at all locations identified by the Department.

- 2.29.2 The Goods supplied under this Contract shall conform to the standards mentioned in the RFP, and, when no applicable standard is mentioned, to the authoritative standards; such standard shall be approved by Department.
- 2.29.3 Implementation Agency shall only procure the hardware and software after approvals from a designated Committee/ Department.

2.30 Audit by Third Party

- 2.30.1 Department at its discretion may appoint third party for auditing the activities of onsite services and operations of entire services provided to the Department.

2.31 Insurance

- 2.31.1 The Goods supplied under this Contract shall be comprehensively insured by Implementation Agency at its own cost, against any loss or damage due to factors including but not limited to theft, riots, fire, manmade disaster or natural disaster, for the entire period of the contract. Implementation Agency shall submit to the Department, documentary evidence issued by the insurance company, indicating that such insurance has been taken.
- 2.31.2 Implementation Agency shall bear all the statutory levies like customs, insurance, freight, etc. applicable on the goods and also the charges like transportation, packaging, delivery etc. that may be applicable till the goods are delivered at the respective sites of installation.
- 2.31.3 Implementation Agency shall take out and maintain at its own cost, on terms and conditions approved by the Department, insurance against the risks, and for the coverages, as specified below;
 - i. at the Department's request, shall provide evidence to the Department showing that such insurance has been taken out and maintained and that the current premiums therefor have been paid.
 - ii. Employer's liability and workers' compensation insurance in respect of the Personnel of the Company, in accordance with the relevant provisions of the Applicable Law, as well as, with respect to such Personnel, any such life, health, accident, travel or other insurance as may be appropriate

2.32 Deemed Acceptance

- 2.32.1 In case the Department fails to respond and provide feedback on above stated submission, the deliverables or SLA and performance reports will be deemed accepted. The Department / Government Department shall not force the bidder, post the elapse of the 15 days approval period, to rework on the said project outputs/ outcomes. However, in case the Department confirms to vendor with an alternative date, then that date would stand revised for deemed acceptance. Such revisions may be limited to 2 (two).

2.33 Transfer of Ownership

- 2.33.1 Subject to the terms of this RFP, Implementation Agency shall sell, assign, convey, transfer and deliver to the Department, and the Department shall purchase, receive and accept from the Implementation Agency, all right, title and interest in and to the Goods required to be provided by the Implementation Agency as per the RFP. The Implementation Agency shall not make any substitute for the Goods of any other model, capacity, or manufacturer without the prior written consent of the Department.
- 2.33.2 Title to & Ownership of the Goods hereunder shall remain vested in Implementation Agency until written Acceptance and on Go Live of the Project by the Department under the terms hereof, at which time title to and ownership of such Goods shall transfer to the Department. In the event this Agreement is terminated prior to expiry of its Term in accordance with the provisions hereof, the title to and ownership of the Goods shall transfer automatically to the Department on the date of such termination. Upon transfer of ownership of the Goods to Department, the Implementation Agency shall treat such Goods as Assets as detailed in this RFP.
- 2.33.3 Notwithstanding the transfer of ownership of the Goods to the Department, the risk of loss in Goods shall remain with the Implementation Agency during the Term of the contract period or till effective date of earlier termination of the contract.

2.34 Exit Management Plan

- 2.34.1 An Exit Management plan shall be furnished by Implementation agency in writing to the department within 120 days from the date of signing the Contract, which shall deal with at least the following aspects of exit management in relation to the contract and in relation to the Project Implementation, and Service Level monitoring.
- i. A detailed program of the transfer process that could be used in conjunction with a Replacement Implementation agency including details of the means to be used to ensure continuing provision of the services throughout the transfer process or until the cessation of the services and of the management structure to be used during the transfer;
 - ii. Plans for provision of contingent support to Project and Replacement Implementation agency for a reasonable period after transfer.
 - iii. Exit Management plan in case of normal termination of Contract period
 - iv. Exit Management plan in case of any eventuality due to which Project is terminated before the contract period.
 - v. Exit Management plan in case of termination of the Implementation agency
- 2.34.2 Exit Management plan at the minimum adhere to the following:
- i. 3 months of the support to Replacement Implementation agency post termination of the Contract
 - ii. Complete handover of the Planning documents, bill of materials, functional requirements specification, technical specifications of all equipment, change requests if any, sources codes, reports, documents and other relevant items to the Replacement Implementation agency/ department
 - iii. Certificate of Acceptance from authorized representative of Replacement Implementation agency issued to the Implementation agency on successful completion of handover and knowledge transfer
- 2.34.3 In the event of termination or expiry of the contract, Project Implementation, or Service Level monitoring, both Implementation agency & department shall comply with the Exit Management Plan.
- 2.34.4 During the exit management period, the Implementation agency shall use its best efforts to deliver the services

2.35 Fraud and Corrupt Practises

- 2.35.1 The Bidders/Bidders and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Selection Process. Notwithstanding anything to the contrary contained in this RFP, the Department shall reject a Proposal without being liable in any manner whatsoever to the Bidder, if it determines that the Bidder has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "Prohibited Practices") in the Selection Process. In such an event, the Department shall, without prejudice to its any other rights or remedies, forfeit and appropriate the Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre-estimated compensation and damages payable to the Department for, inter alia, time, cost and effort of the Department, in regard to the RFP, including consideration and evaluation of such Bidder's Proposal.
- 2.35.2 Without prejudice to the rights of the Department under Clause above and the rights and remedies which the Department may have under the LOI or the Agreement, if a Bidder or Systems Implementation agency, as the case may be, is found by the Department to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Selection Process, or after the issue of the LOI or the execution of the Agreement, such Bidder or Systems Implementation agency shall not be eligible to participate in any tender or RFP issued by the Department during a period of 2 (two) years from the date such Bidder or Systems Implementation agency, as the case may be, is found by the Department to have directly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as the case may be.
- 2.35.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:
- i. "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence the action of any person connected with the Selection Process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of the Department who is or has been associated in any manner, directly or indirectly with the Selection Process or the LOI or has dealt with matters concerning the Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the Department, shall be deemed to constitute influencing the actions of a person connected with the Selection Process); or save as provided herein, engaging in any manner whatsoever, whether during the Selection Process or after the issue of the LOA or after the execution of the Agreement, as the case may be, any person in respect of any matter relating to the Project or the LOA or the Agreement, who at any time has been or is a legal, financial or technical consultant/ adviser of the Department in relation to any matter concerning the Project;
 - ii. "fraudulent practice" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Selection Process;
 - iii. "coercive practice" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Selection Process;
 - iv. "undesirable practice" means establishing contact with any person connected with or employed or engaged by Department with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Selection Process; or having a Conflict of Interest; and
 - v. "Restrictive practice" means forming a cartel or arriving at any understanding or arrangement among Bidders with the objective of restricting or manipulating a full and fair competition in the Selection Process.

3 Special Terms and Conditions of Contract

3.1 Performance Security

- 3.1.1 On receipt of a letter of intent from the Department, the successful Bidder will furnish a bank guarantee, by way of performance security, equivalent to 10 per cent of the total contract value, on or before the signing of the subsequent contract, within 15 (Fifteen) days from notification of award, unless specified to the contrary (Performance Guarantee). The PBG should be valid for 6 (Six) months beyond the contract period. In case the successful Bidder fails to submit Performance Guarantee within the time stipulated, the Department may at its sole discretion cancel the letter of intent without giving any notice and encash the EMD furnished by the Bidder and may go with L2 bidder, in addition to any other right available to it under this RFP.
- 3.1.2 The Performance Guarantee furnished by the successful Bidder shall be in the manner prescribed in Form 4. The successful Bidder shall ensure, the Performance Guarantee is valid at all times during the Term of the subsequent contract (including any renewal) and beyond all contractual obligations, including warranty terms.
- 3.1.3 The Department may invoke the Performance Guarantee in the event of a material breach by the successful Bidder leading to termination for material breach.

3.2 Liquidated Damages

- 3.2.1 Notwithstanding Department right to cancel the order, liquidated damages for late delivery at 1% (One percent) of the undelivered portion of order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 10% of the value of the order value.
- 3.2.2 Department reserves its right to recover these amounts by any mode such as adjusting from any payments to be made by Department to the Bidder. Liquidated damages will be calculated on per week basis.
- 3.2.3 Any such recovery or liquidated damages shall not in any way relieve the Bidder from any of its obligations to complete the Work or from any other obligations and liabilities under the Contract.
- 3.2.4 Delay not attributable to the Bidder will be considered for exclusion for the purpose of computing liquidated damages.

3.3 Failure to agree with Terms and Conditions of the RFP

- 3.3.1 Failure of the successful Bidder to agree with the Terms & Conditions of the RFP shall constitute sufficient grounds for the annulment of the award, in which event Department may award the contract to the next best value Bidder or call for new proposals from the interested Bidders or invoke the PBG of the most responsive Bidder.

3.4 Ownership and Retention of Documents

- 3.4.1 Each Party recognizes and agrees that all of the disclosing Party's Confidential Information is owned solely by the Disclosing Party (or its licensors) and that the unauthorized disclosure or use of such Confidential Information would cause irreparable harm and significant injury, the degree of which may be difficult to ascertain.
- 3.4.2 By disclosing the Confidential Information or executing this Agreement, Disclosing Party does not grant any license, explicitly or implicitly, under any trademark, patent, copyright, mask work protection right, trade secret or any other intellectual property right. The Disclosing Party disclaims all warranties regarding the information, including all warranties with respect to infringement of intellectual property rights and all warranties as to the accuracy or utility of such information.

- 3.4.3 Access to Confidential Information hereunder shall not preclude an individual who has seen such Confidential Information for the purposes of this Agreement from working on future projects for the Disclosing Party which relate to similar subject matters, provided that such individual does not make reference to the Confidential Information and does not copy the substance of the Confidential Information during the Term. Furthermore, nothing contained herein shall be construed as imposing any restriction on the Receiving Party's disclosure or use of any general learning, skills or know-how developed by the Receiving Party's personnel under this Agreement.
- 3.4.4 Execution of this Agreement and the disclosure of Confidential Information pursuant to this Agreement do not constitute or imply any commitment, promise, or inducement by either Party to make any purchase or sale, or to enter into any additional agreement of any kind.
- 3.4.5 Forthwith upon expiry or earlier termination of this Contract and at any other time on demand by the Department, the Bidder shall deliver to the Department all documents provided by or originating from the Department and all documents produced by or for the Bidder in the course of performing the Services, unless otherwise directed in writing by the Department at no additional cost. The Bidder shall not, without the prior written consent of the Department store, copy, distribute or retain any such documents.

3.5 Confidential Information, Security Data

- 3.5.1 The Implementation agency will promptly on the commencement of the exit management period supply to the Department or its nominated agency the following:
 - i. information relating to the current services rendered;
 - ii. documentation relating to Computerization Project's Intellectual Property Rights;
 - iii. all current and updated data as is reasonably required for purposes of Department or its nominated agencies transitioning the services to its Replacement Implementation agency in a readily available format nominated by the Department, its nominated agency;
 - iv. all other information (including but not limited to documents, records and agreements) relating to the services reasonably necessary to enable Department or its nominated agencies, or its Replacement Implementation agency to carry out due diligence in order to transition the provision of the Services to Department or its nominated agencies, or its Replacement Implementation agency (as the case may be).

- 3.5.2 Before the expiry of the exit management period, the Implementation agency shall deliver to the Department or its nominated agency all new or up-dated materials from the categories set out in Schedule above and shall not retain any copies thereof, except that the Implementation agency shall be permitted to retain one copy of such materials for archival purposes only.
- 3.5.3 Before the expiry of the exit management period, unless otherwise provided under the Contract, the Department or its nominated agency shall deliver to the Implementation agency all forms of Implementation agency confidential information, which is in the possession or control of Chairperson, Project Monitoring Unit or its users.

3.6 Records of contract documents

- 3.6.1 The Implementation Agency shall at all-time make and keep sufficient copies of the process manuals, operating procedures, specifications, Contract documents and any other documentation for him to fulfil his duties under the Contract.

3.7 Security and Safety

- 3.7.1 The Implementation agency will comply with the directions issued from time to time by the Department and the standards related to the security and safety, in so far as it applies to the provision of the Services.
- 3.7.2 The Implementation agency shall upon reasonable request by the Department, or its nominee(s) participate in regular meetings when safety and information technology security matters are reviewed.

3.8 Confidentiality

- 3.8.1 The Department or its nominated agencies shall allow the Implementation Agency to review and utilize highly confidential public records and the Implementation Agency shall maintain the highest level of secrecy, confidentiality and privacy with regard thereto.
- 3.8.2 Additionally, the Implementation Agency shall keep confidential all the details and information with regard to the Project, including systems, facilities, operations, management and maintenance of the systems/facilities.
- 3.8.3 The Department or its nominated agencies shall retain all rights to prevent, stop and if required take the necessary punitive action against the Implementation Agency regarding any forbidden disclosure.
- 3.8.4 For the avoidance of doubt, it is expressly clarified that the aforesaid provisions shall not apply to the following information:
 - i. information already available in the public domain;
 - ii. information which has been developed independently by the Implementation Agency;
 - iii. information which has been received from a third party who had the right to disclose the aforesaid information;
 - iv. information which has been disclosed to the public pursuant to a court order.
- 3.8.5 To the extent the Implementation Agency shares its confidential or proprietary information with the Department for effective performance of the Services, the provisions of the Clause 2.8.1 to 2.8.3 shall apply mutatis mutandis on the Department or its nominated agencies.
- 3.8.6 Any handover of the confidential information needs to be maintained in a list, both by Department & SI, containing at the very minimum, the name of provider, recipient, date of generation of the data, date of handing over of data, mode of information, purpose and signatures of both parties.
- 3.8.7 Notwithstanding anything to the contrary mentioned hereinabove, the Implementation Agency shall have the right to share the Letter of Intent / work order provided to it by the Department in relation to this Agreement, with its prospective Departments solely for the purpose of and with the intent to evidence and support its work experience under this Agreement.

3.9 Events of Default by the Implementation Agency

The failure on the part of the Bidder to perform any of its obligations or comply with any of the terms of his Contract shall constitute an Event of Default on the part of the Bidder. The events of default are but not limited to:

- 3.9.1 The Bidder/ Bidder's Team has failed to perform any instructions or directives issued by the Department which it deems proper and necessary to execute the scope of work or provide services under the Contract, or
- 3.9.2 The Bidder/ Bidder's Team has failed to confirm / adhere to any of the key performance indicators as laid down in the Key Performance Measures / Service Levels, or if the Bidder has fallen short of matching such standards / benchmarks targets as the Department may have designated with respect to the system or any goods, task or service, necessary for the execution of the scope of work and performance of services under this Contract. The above-mentioned failure on the part of the Bidder may be in terms of failure to adhere to performance, quality, timelines, specifications, requirements or any other criteria as defined by the Department;
- 3.9.3 The Bidder has failed to remedy a defect or failure to perform its obligations in accordance with the specifications issued by the Department, despite being served with a default notice which laid down the specific deviance on the part of the Bidder/ Bidder's Team to comply with any stipulations or standards as laid down by the Department; or
- 3.9.4 The Bidder/ Bidder's Team has failed to demonstrate or sustain any representation or warranty made by it in this Contract, with respect to any of the terms of its Bid, the RFP and the Contract.
- 3.9.5 There is a proceeding for bankruptcy, insolvency, winding up or there is an appointment of receiver, liquidator, assignee, or similar official against or in relation to the Bidder.
- 3.9.6 The Bidder/ Bidder's Team has failed to comply with or is in breach or contravention of any applicable laws.
- 3.9.7 The Bidder/ Bidder's Team has failed to adhere to any amended direction, instruction, modification or clarification as issued by the Department during the term of this Contract and which the Department deems proper and necessary for the execution of the scope of work under this Contract.
- 3.9.8 Where there has been an occurrence of such defaults inter alia as stated above, the Department shall issue a notice of default to the Bidder, setting out specific defaults / deviances omissions / non-compliances / non-performances and providing a notice of 30 (thirty) days to enable such defaulting party to remedy the default committed.
- 3.9.9 Where despite the issuance of a default notice to the Bidder by the Department, the Bidder fails to remedy the default to the satisfaction of the Department, the Department may, where it deems fit, issue to the defaulting party another default notice or proceed to contract termination.
- 3.9.10 Bidder's failure to perform its contractual responsibilities, to perform the services, or to meet agreed service levels shall be excused if and to the extent Bidder's non-performance is caused by Department's omission to act, delay, wrongful action, failure to provide Inputs, or failure to perform its obligations under this contract.

3.10 Termination

The Department may, terminate the Contract in whole or in part by giving the Implementation Agency or the Implementation agency a prior and written notice of 60 (Sixty) days indicating its intention to terminate the Contract under the following circumstances:

- 3.10.1 Where the Department is of the opinion that there has been such Event of Default on the part of the Implementation agency/ Implementation agency's Team which would make it proper and necessary to terminate this Contract and may include failure on the part of the Implementation agency to respect any of its commitments with regard to any part of its obligations under its Bid, the RFP or under this Contract.
- 3.10.2 Where it comes to the Department attention that the Implementation agency (or the Implementation Agency's Team) is in a position of actual conflict of interest with the interests of the Department, in relation to any of terms of the Implementation agency's Bid, the RFP or this Contract.
- 3.10.3 Where the Implementation agency's ability to survive as an independent corporate entity is threatened or is lost owing to any reason whatsoever, including inter-alia the filing of any bankruptcy proceedings against the Implementation agency, any failure by the Implementation agency to pay any of its dues to its creditors, the institution of any winding up proceedings against the Implementation agency or the happening of any such events that are adverse to the Financial viability of the Implementation agency. In the event of the happening of any events of the above nature, the Department shall reserve the right to take any steps as are necessary, to ensure the effective transition of the pilot site to a successor agency, and to ensure business continuity.
- 3.10.4 Termination for Insolvency: The Department may at any time terminate the Contract by giving written notice to the Implementation agency, without compensation to the Implementation agency, if the Implementation agency becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Department.
- 3.10.5 The Implementation agency may, subject to approval by the Department, terminate this Contract before the expiry of the term by giving the Department a prior and written notice at least 3 (three) months in advance indicating its intention to terminate the Contract.

3.11 Consequence of Termination

- 3.11.1 In the event of termination of the Contract due to any cause whatsoever, [whether consequent to the stipulated term of the Contract or otherwise], Department shall be entitled to impose any such obligations and conditions and issue any clarifications as may be necessary to ensure an efficient transition and effective business continuity of the Service(s) which the Vendor shall be obliged to comply with and take all available steps to minimize loss resulting from that termination/breach, and further allow the next successor Vendor to take over the obligations of the erstwhile Vendor in relation to the execution/continued execution of the scope of the Contract.
- 3.11.2 Nothing herein shall restrict the right of Department to invoke the Department Guarantee and other guarantees, securities furnished and pursue such other rights and/or remedies that may be available with the Department under law or otherwise.
- 3.11.3 The termination hereof shall not affect any accrued right or liability of either Party nor affect the operation of the provisions of the Contract that are expressly or by implication intended to come into or continue in force on or after such termination.

3.12 Change Control Note (CCN)

- 3.12.1 Change requests in respect of the contract agreement, the Project Implementation, the operation, the SLA or Scope of work and Functional Requirement specifications will emanate from the Parties' respective Project Manager who will be responsible for obtaining approval for the change and who will act as its sponsor throughout the Change Control Process and will complete PART A of the CCN attached as Annexure A hereto. CCNs will be presented to the other Party's Project Manager who will acknowledge receipt by signature of the CCN.
- 3.12.2 The IA (Implementation agency) and the Department or its nominated agencies, during the Project Implementation Phase and the Department or its nominated agencies during the Operations and Management Phase and while preparing the CCN, shall consider the change in the context of the following parameter, namely whether the change is beyond the scope of Services including ancillary and concomitant services required and as detailed in the RFP and is suggested and applicable only after the testing, commissioning and certification of the Pilot Phase and the Project Implementation Phase as set out in this Agreement.
- 3.12.3 It is hereby also clarified here that any change of control suggested beyond 20% of the value of this Project will be beyond the scope of the change control process and will be considered as the subject matter for a separate bid process and a separate contract. It is hereby clarified that the 20% of the value of the Project as stated in herein above is calculated on the basis of bid value submitted by the Implementation agency and accepted by the Department or its nominated agencies or as decided and approved by Department or its Nominated Agencies. For arriving at the cost / rate for change up to 20% of the project value, the payment terms and relevant rates as specified in clause 6 of volume 2A and form 3.2 of this volume of RFP document shall apply.
- 3.12.4 Change requests in respect of the contract, the project implementation, or the Service levels will emanate from the Parties' representative who will be responsible for obtaining approval for the change and who will act as its sponsor throughout the Change Control Process and will complete Part A of the CCN (Annexure 10). CCNs will be presented to the other Party's representative who will acknowledge receipt by signature of the authorized representative of the Department.
- 3.12.5 The Bidder and the Department while preparing the CCN, shall consider the change in the context of whether the change is beyond the scope of Services including ancillary and concomitant services required
- 3.12.6 The CCN shall be applicable for the items which are beyond the stated/implied scope of work as per the RFP document.

3.13 CCN Quotation

- 3.13.1 The Bidder shall assess the CCN and complete Part B of the CCN. In completing Part B of the CCN the Bidder shall provide as a minimum:
 - i. a description of the change;

- ii. a list of deliverables required for implementing the change;
 - iii. a timetable for implementation;
 - iv. an estimate of any proposed change;
 - v. any relevant acceptance criteria;
 - vi. an assessment of the value of the proposed change;
 - vii. Material evidence to prove that the proposed change is not already covered within the scope of the project, Agreement and Service Levels.
- 3.13.2 Prior to submission of the completed CCN to the Department or its nominated agencies, the Bidder will undertake its own internal review of the proposal and obtain all necessary internal approvals. As a part of this internal review process, the Bidder shall consider the materiality of the proposed change in the context of the Agreement, the Project Implementation, Service levels affected by the change and the total effect that may arise from implementation of the change.
- 3.13.3 Each Party shall be responsible for its own costs incurred in the quotation, preparation of CCNs and in the completion of its obligations described in this process provided the Bidder meets the obligations as set in the CCN. In the event the Bidder is unable to meet the obligations as defined in the CCN then the cost of getting it done by third party will be borne by the Bidder. Change requests and CCNs will be reported monthly to each Party's representative who will prioritize and review progress.
- 3.13.4 The Bidder shall be obliged to implement any proposed changes once approval in accordance with above provisions has been given, with effect from the date agreed for implementation and within an agreed timeframe. Bidder will not be obligated to work on a change until the parties agree in writing upon its scope, price and/or schedule impact. The cost associated with any hardware/goods/License for COTS product should not exceed the price quoted in the Bidders proposal. Any costs associated with changes to Software specifications which cannot be arrived at on the basis of the Bidders proposal shall be mutually agreed to between the Bidder and the Department.

3.14 CCN Template

Change Control Note	CCN Number
Part A : Initiation	
Title	
Originator	
Sponsor	
Date of Initiation:	
Details of Proposed Change	
(To include reason for change and appropriate details/specifications. Identify any attachments as A1, A2, A3 etc.)	
Authorized by:	Date:
Name:	
Signature:	Date:
Received by the IP	
Name:	
Signature:	
Change Control Note	CCN Number
Part B: Evaluation	
(Identify any attachments as B1, B2, and B3 etc.)	
Changes to Services, charging structure, payment profile, documentation, training, service levels and component working arrangements and any other contractual issue.	
Brief Description of Solution:	
Impact:	
Deliverables:	
Timetable:	

Charges for implementation: (including a schedule of payments)	
Other relevant information: (including value-added and acceptance criteria)	
Authorized by the implementation partner	Date:
Name:	
Signature:	

3.15 Annexure – II: Form of Agreement

THIS Agreement made the date of 2019, between (hereinafter referred to as the "IA") of the one part and (hereinafter called the "NOIDA") of the other part.

WHEREAS IA has the required professional skills, personnel and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract and is about to perform services as specified In the RFP (hereinafter called "works") mentioned, enumerated or referred to in certain Contract conditions, specification, scope of work, other sections of the RFP, covering letter and schedule of prices which, for the purpose of identification, have been signed by on behalf of the IA and (NOIDA) on behalf of NOIDA and all of which are deemed to form part of the Contract as though separately set out therein and are included in the expression "Contract" whenever herein used.

NOW, THEREFORE, IT IS HEREBY AGREED between the parties as follows:

- a. NOIDA has accepted the tender of IA for the provision and execution of the said works for the sum of Upon the terms laid out in the RFP.
- b. IA hereby agrees to provide Services to NOIDA, conforming to the specified Service Levels and conditions mentioned
- c. The following documents attached hereto shall be deemed to form an integral part of this Agreement:

Complete Request for Proposal (RFP) Document	<i>Volumes I, II (including annexure) and III of the RFP and corrigendum and addendum, if any</i>
Break-up of cost components	<i>IA's Financial Proposal</i>
NOIDA's Letter of Acceptance dated <<>>	<i>To be issued later by NOIDA</i>
SI's Letter of acceptance dated <<>>	<i>To be issued later by the IA</i>
Bids submitted by SI as per file No. <<>>	<i>IA's Technical bid</i>

- d. The mutual rights and obligations of the "NOIDA" and IA shall be as set forth in the Agreement, in particular:

IA shall carry out and complete the Services in accordance with the provisions of the Agreement; and the "NOIDA" shall make payments to IA in accordance with the provisions of the Agreement.

NOW THESE PRESENTS WITNESS and the parties hereto hereby agree and declare as follows, that is to say, in consideration of the payment to be made to I/A by NOIDA as hereinafter mentioned, I/A shall deliver the services for the said works and shall do and perform all other works and things in the Contract mentioned or described or which are implied therefrom or therein respectively or may be reasonably necessary for the completion of the said works within and at the times and in the manner and subject to the terms, conditions and stipulations mentioned in the said Contract.

AND in consideration of services and milestones, NOIDA shall pay to I/A the said sum of or such other sums as may become payable to I/A under the provisions of this Contract, such payment to be made at such time and in such manner as is provided by the Contract.

IN WITNESS WHEREOF the parties hereto have signed this deed hereunder on the dates respectively mentioned against the signature of each:

Signed

Name :

Designation :

Date :

Place :

Witnessed by
:

Signed

Name :

Designation :

Date :

Place :

Signed

Name :

Designation :

Date :

Place :

Witnessed by
:

Signed

Name :

Designation :

Date :

Place :

4 Section C: SERVICE LEVELS

4.1 Introduction

- a. Service Level Agreement
(SLA) shall become the part of contract between NOIDA and the successful bidder. SLA defines the terms of the successful bidder's responsibility in ensuring the timely delivery of the deliverables and the correctness of the same based on the agreed Performance Indicators as detailed in this section.
 - b. The Service Level agreements have been logically segregated in the following categories:
 - Implementation phase related performance levels
 - Availability of Solutions
 - Camera feed and quality
 - Leased line network
 - Other services
 - Issue resolution
2. The IA has to comply with service level requirements to ensure adherence to project timelines, quality and availability of services, throughout the period of this contract i.e. for a period of 5.7 years including implementation phase. It is the responsibility of IA to provide appropriate software/hardware/automated tools as may be required to monitor and submit reports of all the SLAs mentioned in this section.
 3. In case of severe performance degradation of the system/ services during the contract period, the IA will be expected to take immediate corrective action. In case issues are not rectified to the complete satisfaction of Purchaser within a reasonable period of time then the Purchaser will have the right to take appropriate penalizing actions, including action as per clause 3.6 (Issue Management Procedure) of this Section or termination of the contract.

4.2 Measurements and Targets

4.2.1 Implementation Phase related performance levels:

Sl. No.	Measurement	Definition	Target	Penalty
Installation Phase				
1.	Installation and Commissioning system at all field locations, and command control centre	Hardware supply, delivery, installation, integration, testing of all hardware components / equipment / devices / software applications etc. required for the system to the satisfaction of the Purchase and conforming to the Service Levels defined	Refer his RFP	Penalty covered under Liquidated Damages of this section.

4.2.2 Availability of Solutions

Measurement	Definition	Target	Severity Level
Availability			
1. Availability of Applications including: a. Video Management / Analytics b. ANPR and ANPR with VMS c. Red light violation detection	Uptime = $\{1 - [(\text{Application downtime}) / (\text{Total Time} - \text{Maintenance Downtime})]\}$ Total time shall be measured on 24*7. Prime business hours are defined as 0700	Minimum 98% up time measured on a monthly basis	-
		>= 96.0% to <98.0 % up time measured on a monthly basis	6

Measurement	Definition	Target	Severity Level
d. ATCC e. Speed Detection f. Face recognition g. E-challan software h. Variable Message Signboard Software i. Environmental Sensor Software j. Backup and recovery Software k. Database Software	hrs to 2100 hrs Application Downtime shall be measured from the time the solution becomes unavailable (due to any reasons whatsoever attributable to the Bidder) for Business processing either to the end user or for batch job processing to the time it becomes fully available for the above stated business processes. Any downtime for maintenance shall be with prior written intimation to the Purchaser. Measurement Tool: Reports from EMS and SLA monitoring tool Example: Application downtime = 2 hrs Total time (in a week) = $24 \times 7 = 168$ hrs Maintenance downtime = 4 hr Uptime = $1 - (2 / (168 - 4)) = 0.987$ or 98.7%	<96.0% time measured on a monthly basis	9
2. Ratio of Live cameras/Live v/s Total number of cameras at any point of time (To be measured monthly) Ratio of Live Environmental Sensor v/s Total number of Environmental sensor (To be measured monthly)	Number of live cameras/ Number of total cameras	>=99%	-
		>=95 % to < 99%	3
		< 95%	5

Measurement	Definition	Target		Severity Level
3. ANPR for standard HSN plates (4 wheeler and above)	Percentage of correct reading by ANPR camera for standard number plates for 4 wheelers and above	Day time:	Night time	-
		>75% to <85%	Same as day time	3
		<75%	Same as day time	4
4. ANPR for standard number plates (2 and 3 wheelers and above) fitted as per traffic norms	Percentage of correct reading by ANPR camera for standard number plates for 2 and 3 wheelers and above	>=75%	> = 70%	-
		>70% to <75%	> 65% to < 70%	3
		<70%	<65%	4
5. ANPR for non-standard number plates (4 wheeler and above)	Percentage of correct reading by ANPR camera for non-standard number plates for 4 wheelers and above	>=70%	> = 65%	-
		>65% to <70%	> 60% to < 65%	3
		<65%	< 65%	4
6. ANPR for non-standard number plates (2 and 3 wheelers and above)	Percentage of correct reading by ANPR camera for non-standard number plates for 2 and 3 wheelers and above	>=75%	> = 60%	-
		>70% to <75%	> 55% to < 60%	3
		<70%	< 50%	4
7. Availability of CCC, and cloud infrastructure for DC including:	Uptime = {1 - (Equipment downtime-maintenance downtime) / (Total Time – maintenance downtime)}	Minimum 97% up time measured on monthly basis		0
		>= 95.0% to <97.0 % up time measured on monthly basis.		5

Measurement	Definition	Target	Severity Level
<ul style="list-style-type: none"> a. Video wall b. Work station c. Network Equipment's d. Storage e. Server f. Joystick g. Printer & Scanner h. Access Control System i. Display j. PSTN Phones k. PA System l. Diesel Generator m. UPS 	<p>Equipment Downtime shall be measured from the time the equipment becomes unavailable (due to any reasons whatsoever attributable to the Bidder) for Business processing to the end user to the time it becomes fully available.</p> <p>Any downtime for maintenance shall be with prior written intimation to the Purchaser.</p> <p>Please note that continuous downtime of every 2 hours (from 7 am to 12 midnight) would raise the severity by one level. e.g. the severity level will raise from 0 to 1</p> <p>Please note that continuous downtime of every 6 hours (from midnight to 7 am) would raise the severity by one level. e.g. the severity level will raise from 0 to 1</p> <p>Measurement Tool: Reports from Health Monitoring Software / Call logs</p>	<95.0% up time measured on monthly basis.	7
<p>8. Repair / replacement of infrastructure equipment including:</p> <ul style="list-style-type: none"> a. Cameras b. Variable Message Signboard c. PA system 	<p>Bidder should keep minimum 10% spare at any given point of project execution.</p> <p>Infrastructure equipment should be replaced or repaired after complaint logging from</p>	Within 24 business hours of logging complaints	-
		>1 to <=2 calendar days of logging complaint	INR 250 per day for each component

Measurement	Definition	Target	Severity Level
d. ECB buttons e. Handheld devices f. Environmental Sensor g. Network Equipment h. Server	purchaser officials Measurement Tool: System generated call log at Helpdesk	More than 2 calendar days of logging complaint	INR 1000 per day for each component
9. Asset/ Inventory management	Provide monthly MIS of Asset Inventory to check asset inventory level.	>= 95 % of the minimum required inventory level should be measured on monthly basis	-
	Measurement Tool: SLA Monitoring tool for inventory management	< 95% of the minimum required inventory level	3
	Conduct Annual Physical Asset Verification once a year and give a report within 2 months from the verification.	100% Management approval of Physical Asset Verification report	5
10. Fire detection and suppression system uptime	Availability of fire detection and suppression system in the command & control centre. Periodic audits would be done to check the viability of these systems	100% availability measured periodically	-
	Measurement Tool: Random checks	Any incident of non-compliance	5

4.2.3 Network availability

Measurement	Definition	Target	Severity Level
Network availability			
1. Network availability at all traffic junctions/ locations where cameras are installed and its connectivity with the Command Control Center. 2. Network availability from Command Control Center to Cloud.	Network components (availability for a month is defined as total time (in minutes) in a month less total down time (in minutes) in a month excluding planned network downtime. The network is considered available when all the services in full capacity are available. This SLA is applicable when router and network devices are working, and bandwidth is not available. $\text{Network Availability (\%)} = \frac{(\text{Total minutes during the month} - \text{Planned downtime} - \text{Downtime minutes during the month}) \times 100}{\text{Total minutes during the month}}$ Total Time shall be measured on 24*7 basis. Planned Network Component Downtime refers to unavailability of network services due to infrastructure maintenance activities such as configuration changes, up gradation or changes to any supporting infrastructure. Details related to such planned outage shall be agreed with the Purchaser.	>=99 %	-
		<= 99% to >96% up time measured on monthly basis	4
		<= 96 % to >94% up time measured on monthly basis	6
	Measurement Tool: Reports from	<94.0% up time measured on a monthly basis	7

Measurement	Definition	Target	Severity Level
	NMS/Health monitoring software/call logs		

4.2.4 Other availability

Measurement	Definition	Target	Severity Level
Helpdesk availability			
1. Availability of Resources for IT Help Desk at Purchaser's designated location	<p>[(Total number of man-days available for a month) / (Agreed Total number of man-days in a month)] *100</p> <p>There shall be no instance when all the resources for IT Helpdesk are unavailable. This may lead to Severity Level 8 penalty at the discretion of the Department.</p> <p>Measurement Tool: SLA Monitoring tool for Online attendance</p>	>=98 % calculated on monthly basis	-
		<= 96% to >98% up time measured on monthly basis	2
		<= 90 % to >96% up time measured on monthly basis	3
		<90.0% up time measured on a monthly basis	4

Measurement	Definition	Target	Severity Level
Audit			
2. Outcome of Third-Party Audits	The third-party auditor shall carry out Application Integration, Security, Infrastructure and SLA Compliance Audit. The three ratings for the performance shall be: <ul style="list-style-type: none"> - Satisfactory - Requires improvement - Unsatisfactory Measurement Tool: Health Monitoring tool / Audit Reports	Satisfactory	-
		Required improvement	5
		Unsatisfactory	6
3. Implementation of recommendations of Third Party Audits	Implementation of recommendations from Third Party Audit which have been agreed upon to be implemented by the Bidder Measurement Tool: Health Monitoring tool / Audit Reports	100% on time, for recommendations agreed upon with the Purchaser, to be implemented in the defined period	5
Reporting			
4. MIS reporting	MIS reports as agreed with the Purchaser	3 instances of delay in a quarter	-
	Measurement Tool: Health Monitoring tool	>3 instances of delay in a quarter	5
Training			

Measurement	Definition	Target	Severity Level
5. Training provided by bidder	Bidder should devise feedback forms to receive feedback from all the trainees. The feedback form should rate the training, on scale of 1 to 5 with 1 being the minimum.	More than 75% of the trainees should rate the bidder training more than Average (i.e. rating of 3)	-
	Measurement Tool: Feedback Form filled by trainees	< 75% trainees rating training above Average	Re-training of the batch
6. Re-installation of the equipment's/ systems in case of any failure/ complaints/ issue etc.	Re-installation of the system component on the junctions/ locations and any other place which is covered under this project.	Within 10 days of logging complaint	-
	Any loss or damage due to factors such as theft, riots, fire, manmade disaster or natural disaster Measurement Tool: Health monitoring software/ Call logs	> 10 days of logging complaint	Till that time non-payment of the system

i. Footnotes

- i. Non-working days = All Saturdays, Sundays and Public Holidays as declared by the Department
- ii. 24*7 means three shifts of 8 hours every day, for all seven days of the week, without any Non-working days

4.3 Severity for Bugs / Defects

The severity of a bugs / defects would be based on the business impact of the problem.

Severity is defined as follows:

Severity of Bugs / Defects	Definition
Critical	Showstoppers involving major functional failure in the application. There are no usable workarounds available to troubleshoot the problem. Affects majority of the users (more than 25%).
High	Users face severe functional restrictions in the application irrespective of the cause. Workarounds are time consuming. Affects majority of the users (more than 25%).
Medium	Moderate functional restrictions in the application irrespective of the cause. Has a convenient and readily available workaround. Affects a few users.
Low	Requiring cosmetic functional changes. Does not require any workaround. It may include user query / suggestions but has no business impact.

4.4 Reporting Procedures

- 4.4.1 The IA representative shall prepare and distribute Service level performance reports in a mutually agreed format by the 5th working day of subsequent month and 10th working day of the completion of each quarter. The reports will include “actual versus target” Service Level Performance, a variance analysis and discussion of appropriate issues or significant events. Performance reports will be distributed to Purchaser management personnel as directed by Department.
- 4.4.2 The reports should be made available on the SLA monitoring tool with relevant access permissions to the Department and its nominated agencies.
- 4.4.3 Also, the IA may be required to get the Service Level performance report audited by a third-party Auditor appointed by the Department.

4.5 Penalties

4.5.1 General

- a. A maximum level of performance penalties is established and described below.
- b. The framework for performance penalties as a result of not meeting the service level targets are detailed below.
- c. Performance penalties shall be levied for not meeting each of the severity levels of performance as per the following table:

Severity Level	Penalty as a percentage of monthly payments applicable
9	Event of default clause 2.9 and termination clause 2.10 and the consequences thereof as per clause 2.11 of this Volume of RFP.
8	5.0 %
7	3.0 %
6	2.0 %
5	1.0 %
4	0.5 %
3	0.4 %
2	0.3 %
1	0.2 %

- d. Performance Penalty for not meeting a measurement parameter for two consecutive quarters shall result in twice the penalty percentage of that respective measurement parameter.
- e. Maximum Penalty applicable for any quarter should not exceed 30% of the 'applicable fees' for the respective quarter.
- f. Two consecutive quarterly deductions of 30% of the applicable fee on account of any reasons will be considered as an event of default and the Purchaser may consider the same as a ground for termination of the contract as per clause 2.9 and clause 2.10 of the RFP Volume III.

4.6 Issue Management Procedures

4.6.1 General

- a. This process provides an appropriate management structure for the orderly consideration and resolution of business and operational issues in the event that quick consensus is not reached between Department and IA.
- b. Implementing such a process at the beginning of the outsourcing engagement significantly improves the probability of successful issue resolution. It is expected that this pre-defined process will only be used on an exception basis if issues are not resolved at lower management levels.

4.7 Issue Management Process

- a. Either Department or the IA may raise an issue by documenting the business or technical problem, which presents a reasonably objective summary of both points of view and identifies specific points of disagreement with possible solutions.

- b. Any unresolved issues/disputes concerning the Project/Contract between the Parties will first be referred in writing to the Project Nodal Officer for his consideration and resolution. If the Project Nodal Officer is unable to resolve any issue/dispute within 5 days of reference to them, the Project Nodal Officer will refer the matter to the PMU. If the PMU is unable to resolve the issues/disputes referred to them within 15 days the unresolved issue/dispute will be referred to Apex Committee for resolution. The Apex Committee within 30 days of reference to them shall try to resolve the issue/dispute.
- c. If the Apex Committee fails to resolve a dispute as per the above clause, the same shall be referred to arbitration. The arbitration proceedings shall be carried out as per the Arbitration procedures mentioned in Clause 1.26 of this Volume of RFP.

4.8 Service Level Change Controls

4.8.1 General

- a. It is acknowledged that this Service levels may change as Department's business needs evolve over the course of the contract period. As such, this document also defines the following management procedures:
 - A process for negotiating changes to the Service Levels
 - An issue management process for documenting and resolving particularly difficult issues.
 - Department and IA management escalation process to be used in the event that an issue is not being resolved in a timely manner by the lowest possible level of management.
- b. Any changes to the levels of service provided during the term of this Agreement will be requested, documented and negotiated in good faith by both parties. Either party can request a change.
- c. **Service Level Change Process:** The parties may amend Service Level by mutual agreement in accordance. Changes can be proposed by either party. Unresolved issues will also be addressed. The IA's representative will maintain and distribute current copies of the Service Level document as directed by Purchaser. Additional copies of the current Service Levels will be available at all times to authorized parties.
- d. **Version Control:** All negotiated changes will require changing the version control number. As appropriate, minor changes may be accumulated for periodic release or for release when a critical threshold of change has occurred.

CONTRACTOR SIGNATURE
WITH SEAL

OFFICER INVITING TENDER

List of Makes Existing HTMS Project		
S.N.	Description of Items	Make
1.00	Variable message Sign –VMS 3G/GPRS/OFC based EN12966 Certified Variable Message Sign having High Bright through hole 5mm LEDs with Polycarbonate Lens and Display area of 3750mm x 1800mm.	ENVOYS
2.00	U-shaped Gantry for VMS mounting.	ENVOYS
3.00	5-6 KVA UPS, 2 Hrs Backup.	NUMERIC
4.00	Emergency Call Box ECB Solar powered GSM based Emergency Call Box with Crash Barrier	EFKON
5.00	Video Incident Detection : All-in-one Video Incident Detection System with built-in Automatic Incident Detection (AID) module for advanced IP Video Streaming.	POLIXEL / FLIR
6.00	15 Mtr long galvanized octagonal pole (For mounting 1xVID Camera, 1xPTZ Camera, 2xIP BOX Camera on each pole) having 125mm top, 270mm bottom and 3mm thick complete with 340x340x25mm base plate with foundation bolts of 20mm dia 300mm deep in 1:2:4 c.c. with required foundation as per drawing including excavation back filling complete.	EFKON
7.00	CCTV Surveillance PTZ DOME CAMERA 2 Megapixel True Day & Night with IR cut filter – 1/2.8" image sensor, 1080p, 780p, D1 & CIF Video resolution, 20x Optical & 12x digital zoom, 4.7-94mm Lens, 1/1 - 1/10000 shutter speed, Full frame rate full colour H.264.MJPEG Video compression, IEEE 802.3/IEF 10/100Base-T Ethernet, TCP, UTP, ICMP, IGMP, SNMP, HTTP Network Interface.	POLIXEL / HIKVISION
8.00	IP FIXED BOX CAMERA 2 Megapixel True Day & Night with IR cut filter IP Fixed Box camera - 1/3" image sensor, 1080p, 780p, D1 & CIF Video resolution, 5-50mm auto iris Lens, 1/50 - 1/50000 shutter speed, Full frame rate upto 30fps @ 1080p H.264.MJPEG Video compression, IEEE 802.3/IEF 10/100Base-T Ethernet, TCP, UTP, ICMP, IGMP, SNMP, HTTP Network Interface.	POLIXEL / HIKVISION
9.00	12Mtr long galvanized octagonal pole (For mounting 1xPTZ Camera and 2Xip fixed Camera on each pole) having 125mm top, 270mm bottom and 3mm thick complete with 340x340x25mm base plate with foundation bolts of 20mm dia 300mm deep in 1:2:4 c.c. with required foundation as per drawing including excavation back filling complete.	EFKON
10.00	Speed Monitoring :- ANPR based Speed Monitoring & Speed Violation Detection System.	POLIXEL
11.00	Weather Monitoring :- OFC based Weather Monitoring System with built-in sensors for Ambient Temperature, Relative Humidity, Road Temperature, Wind Speed and Direction.	ENVOYS
12.00	Communication Backbone :- Optical Fiber Cable through HDPE Pipe (Including Termination Boxes and other fiber accessories) in meters along Noida - Greater Noida Expressway with 100% redundancy.	FINOLEX
13.00	Transmission Equipment for ANPR and VMS (optional) with 6/8 port Industrial Grade FC Switch (Operating Temperature -10 to +50 deg C) .	AMG
14.00	Transmission Equipment for CCTV and VID System with 6/8 port Industrial Grade FC Switch (Operating Temperature -10 to +50 deg C) .	AMG
15.00	Solar Power Backup – Solar Backup for Surveillance and VID Camera, 4 hrs backup.	LUMENIOUS
16.00	Control Room – HTMS Rack Mount Server +1 Redundant - HP DL 360P Gen 8 -1U Server Intel® Xeon® E5- 2640 (2.5 GHz/6-core/15 MB/7.2GT-sQPI/95W, DDR3-1333, HT, Turbo2, 2 CPU's, with 2 x 300 GB SAS drive, 32 GB RAM.	IBM (x3650m4)
17.00	VID +1/Surveillance/Speed Monitoring/VMS-WMS/ECB Rack Mount Servers - HP DL 360P Gen 8 1U Server Intel® Xeon® E5-2640 -2.5 GHz/6-core/15 MB/7.2GT-sQPI/95W, DDR3- 1333, HT, Turbo2, 2 CPU's, with 2 x 300 GB SAS drive, 32 GB RAM.	IBM (x3650m4)
18.00	Supply of SAN Storage - 10 TB expandable to 120 TB.	IBM -STORWIZE-V3700
19.00	Tape Library	IBM--357312U

20.00	42 U Server/Network Racks	VALRACK
21.00	Work station Intel® 2nd Generation Core i7 -2600 Intel Q67 Express Chipset Integrated Intel® HD Graphics 2000 4 GB Non-ECC dual -channel 1333 MHz DDR3 SDRAM expandable up to 16 GB Integrated Intel® 82579LM Ethernet LAN 10/100/1000 Minimum 5 External USB 2.0 ports 2.0 Serial; 1 RJ-45; 1 VGA; 2 PS/2; 2 Line-in (stereo/microphone), 2 Line-out (headphone/speaker) DVD +/- RW 250 GB 7200 RPM SATA 3.0 GB Minitower with standard Power supply unit & power cables USB Entry Keyboard USB Optical Mouse/Laser Mouse Internal Audio Speaker Intel® Standard Manageability Microsoft Windows 7 Professional -64 bit.	ACER
22.00	50 KVA Online UPS, 3 Phase, with 2 hrs Backup, make NUMERIC, TRITRONICS, EMERSON, APC, SOCOMEC, EATON as per the direction of Engineer in charge	EMERSON
23.00	Joystick, Keyboard controller.	POLIXEL
24.00	3x3 with 55" DLP based Video Wall .	DELTA
25.00	10 Tonne Precision Air Conditioner -PAC for Data Centre (2+2 configuration).	EMERSON
26.00	FM 200 water less fire suppression system, water leakage detection system, rodent repellent system, very early smoke detection system, access control system, CCTV surveillance system and PA system.	SIEMENS
27.00	Overhead Projector for conference room.	SONY
28.00	75 KVA DG set	JACKSON
29.00	SOFTWARE HTMS Control Centre Software License Fee.	EFKON
30.00	VID Control Centre Software License Fee.	TRAFFICON
31.00	. VMS and Weather Monitoring Control Centre Software License Fee.	ENVOYS
32.00	CCTV Control Centre Software License Fee.	POLIXEL
33.00	Speed Monitoring Control Centre Software License Fee.	POLIXEL
34.00	Network Management System -NMS software License Fee - Premium Edition, upto 100 devices & servers .	EFKON
35.00	ECB Management System control centre software license	EFKON
36.00	Windows 2008 Server License	MICROSOFT WINDOWS

List of clarifications items:

Sl. No.	Content of RFP Requiring Clarification	Clarifications
1.	Shall create a traffic data warehouse for all historic traffic information gathered from the hardware installed on the road network.	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
2.	Traffic sensors shall be provided for successful functioning of the ITMS system to meet the defined SLAs.	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
3.	Payment Plan	First payment i.e, Mobilization advance of 10% against BG is to be adjusted in pro-rata basis equally in all payments which will be made against invoices. So, payment plan is as per RFP.
4.	As per TRAI guidelines, resale of bandwidth connectivity is not allowed. In such a case tripartite agreement (i.e. Annexure 6: Draft Model tripartite Agreement for Resale of Network Bandwidth) may be formed between Purchaser, selected Bidder and Internet Service Provider (s).	Please refer Clause 1.22: Sample Tri-Partite Agreement and Sub-Clause 5 and 6 of Volume III of the RFP document
5.	The Implementation Agency shall be responsible for deploying the entire ITMS Solution on a Cloud.	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs. If any application requires local compute for quick / faster response with low latency, the bidder shall propose necessary IT infra locally.
6.	Traffic signal installed (Yes/No)	Refer page 46 of 56, read ATCC as ' ATCC & ATCS'
7.	Summary of Total Quantities	The bidder encouraged to conduct detailed survey to gather all the details to assess the requirement as per the RFP and project requirements. Refer Volume II A, Page 46 of 56, Read ATCC as ATCC & ATCS
8.	The Bidder has to provide a solution, which will have a collaborative framework for receiving video feeds from various systems and sub-systems of public and private establishments. The list of establishments shall be provided by Police Department from time to time	The RFP is not restricting any bidder to propose their product. The bidders are free to choose any product and propose as a part of solution, provided they are meeting the RFP and project requirements.

9.	<p>Vehicle detector sensor should look at approaching traffic and should be able to do queue length detection for minimum 100 meters. This is to make sure that ATCS systems work based on queue and traffic analysis. Evidence camera will look at receding traffic for Enforcement purpose</p>	<p>This is an indicative requirement. The bidder can propose an optimum solution, based on the RFP and project requirement.</p>
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Sl. No.	Content of RFP Requiring Clarification	Clarifications
10.	As a part of the collaborative monitoring effort, the system shall also facilitate citizens after authentication to upload video feeds to the CCTV System. This upload of video shall be subject to administrative and technical checks so that frivolous and defamatory videos are not uploaded in the system.	Noida Authority has a mobile app which is used by citizens for raising complaints/ issues. This app will be integrated with the ITMS system and will be used for uploading any video. The video will be validated by NOIDA before upload. This is to avoid any frivolous and defamatory video which may create issue in maintaining law and order in the city.
11.	SI no 4 Speed detection Cameras / Radar with LPU, Software as per specifications.	The bidder encouraged to conduct detailed survey to gather all the details to assess the requirement as per the RFP and project requirements
12.	693 ANPR and 150 RLVD	The bidder encouraged to conduct detailed survey to gather all the details to assess the requirement as per the RFP and project requirements
13.	Shall infer a coherent and comprehensive observed traffic state (speeds, vehicular densities, and presence of queues) on all network elements, from abovementioned observations, including vehicle trajectories, through a number of map matching, data validation, harmonization and fusion processes	The RFP is not restricting any bidder to propose their product. The bidders are free to choose any product and propose as a part of solution, provided they are meeting the RFP and project requirements.
14.	Shall generate alerts to the operator that trigger on customizable conditions in the network (starting with simple drops in flow, up to total queue lengths along emission sensitive roads surpassing a definable threshold)	The RFP is not restricting any bidder to propose their product. The bidders are free to choose any product and propose as a part of solution, provided they are meeting the RFP and project requirements.
15.	Signal head compatibility: LED 230VAC or 24VDC with dimming of various intensity levels. The system should capable to achieve any levels of dimming	This is to clarify that LED Retrofit Input can be of 230V AC or 24V DC
16.	26. OEM for Command and Control Centre Application (CCC) should have deployed its application in 2 projects in Globally in Smart Cities / Safe Cities / Large Campus / Integrated Security Systems.	Yes. Global projects include Indian projects as well.
17.	3.6 Manage and Integrating existing HTMS project of NOIDA:	The selected IA need to comply to the scope related requirements mentioned in the Clause 3.6 of Volume II of RFP document
18.	LPU for ANPR / Video analytics Camera and all other accessories as per specifications: 164 (No)	The bidder encouraged to conduct detailed survey to gather all the details to assess the requirement as per the RFP and project requirements

20.	Seat Belt: 267 (No)	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed
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Sl. No.	Content of RFP Requiring Clarification	Clarifications
22.	2.22 Video Analytics System	All the required details are mentioned in the RFP to fulfil solution requirements. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
23.	3.4 ANPR Camera with Embedded LPU	This is an indicative requirement. The bidder can propose an optimum solution, based on the RFP and project requirement.
24.	2 GB/ minimum 16GB for OS, Windows 10 or better	The bidders can consider this clause under the scope of LPU.
25.	Average Speed Detection Motion Detection, Direction of travel & Virtual loop.	The bidders can consider this clause under the scope of LPU.
26.	3.1, 3.23 & 3.24 4/8/16/24 port Industrial Switch at Field Locations - Edge Level	The RFP is not restricting any bidder to propose their product. The bidders are free to choose any product and propose as a part of solution, provided they are meeting the RFP and project requirements. The bidder encouraged to conduct detailed survey to gather all the details to assess the requirement as per the RFP
27.	Software and Server Setup	It is the responsibility of bidder to demonstrate the PoC as per the requirements of NOIDA.
28.	2 MP or better (1920x1080)	The bidder encouraged to conduct detailed survey to gather all the details to assess the requirement as per the RFP and project requirements
29.	3.3 ANPR Camera without embedded LPU	25 FPS
30.	RFP mentions other use-cases like Vehicle counting & classification, vehicle detection color/make/brand/Pedestrian management & free lane detection etc. but there is no information on how many cameras will these are to be run	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
31.	Item 11 - Junction Box IP 66 Outdoor for Power Supply, Network Switch and all other accessories as per specifications. Item 12 - Small Junction Box IP 66 Outdoor for ANPR LPU and all other accessories as per specifications.	Bidders are free to choose the best optimal design to meet solution requirement and SLAs.
32.	Rain Canopy, Cable entry with glands, proper earthing and Fans/any other accessories as required for operation of equipment "switch in junction box	Kindly refer Clause 5.11 of Volume II of RFP document
33.	Item no 26 - Voltage Surge Suppressor for junction Box and all other accessories as per	Kindly refer specs of Surge Protectors for Electronic equipment under Clause 3.31 of Volume IIB of RFP document

Sl. No.	Content of RFP Requiring Clarification	Clarifications
35.	General	In the case, where Bidder has signed NDA with the client, following supporting documents may be submitted: 1. Copy of NDA 2. Self-certificate from the authorised signatory
36.	General	As per the UP Procurement Rules 2016, Clause 9.7, Government institutions / State Public Sector Undertakings, which manufacture and supply goods, are exempted from furnishing earnest money for tenders. The bidders may decide whether they are under the purview of this clause.
37.	The bidder/OEM should have supplied at least 500 units of cameras for ANPR application.	This Query is not relevant
38.	Hand held Devices, SMS, Web Portal	The bidder encouraged to conduct detailed survey to gather all the details to assess the requirement as per the RFP and project requirements
39.	f. Traffic congestion data through ANPR and 3rd party sources	Minimum Specifications are given in RFP document, bidders are advised to do due diligence before selection of any product. Product should fulfil RFP requirements.
40.	The system should synchronize the evidence camera, license plate recognition camera and store the record in database with License plate image, image of the vehicle, and at least five snaps showing clearly that the vehicle is crossing the red light / stop line while the signal is RED. The needed storage and hardware sizing in cloud must be provisioned by the bidder for 30 days.	Minimum Specifications are given in RFP document, bidders are advised to do due diligence before selection of any product. Product should fulfil RFP requirements.
41.	The system should have function to forward the generated alerts to designated email and mobile phone number.	Minimum Specifications are given in RFP document, bidders are advised to do due diligence before selection of any product. Product should fulfil RFP requirements.
42.	The system should have capability to detect Free Left Violation and shall be synchronized with ANPR system.	Minimum Specifications are given in RFP document, bidders are advised to do due diligence before selection of any product. Product should fulfil RFP requirements.
43.	Violation retrieval could be sorted by date, time, location and vehicle registration number and the data structure should be compatible with NOIDA Police database structure. It should also be possible to carry out recursive search and wild card search.	Minimum Specifications are given in RFP document, bidders are advised to do due diligence before selection of any product. Product should fulfil RFP requirements.
44.	Success rate of ANPR will be taken as 80% or better during the day time and 60% or better during the night time with a standard number plate	Minimum Specifications are given in RFP document, bidders are advised to do due diligence before selection of any product. Product should fulfil RFP requirements.

45.	<p>Image should have a header/footer depicting the information about the site IP and violation details like date, time, equipment ID, location ID, Unique ID of each violation, lane number, Registration Number of violating vehicle and actual violation of violating vehicle etc. so that the complete</p>	<p>Minimum Specifications are given in RFP document, bidders are advised to do due diligence before selection of any product. Product should fulfil RFP requirements.</p>
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Sl. No.	Content of RFP Requiring Clarification	Clarifications
46.	It synchronizes among the RED-light Status camera, License plate camera and evidential proof capture camera and store the record in Database with License plate image, image of the vehicle, and at least 3 snaps showing clearly that the vehicle is crossing the stop line while the signal is RED.	Minimum Specifications are given in RFP document, bidders are advised to do due diligence before selection of any product. Product should fulfil RFP requirements.
47.	It should be able to intimate the incidence in real time through SMS/MMS to designated Cell phone, so that this facility can be used to alert the traffic personnel posted at the next traffic intersection.	Minimum Specifications are given in RFP document, bidders are advised to do due diligence before selection of any product. Product should fulfil RFP requirements.
48.	To be able to create playlists and send them over the network to 100 media players or more for payout based on schedule and sequencing. This software to be loaded on suitable hardware to be supplied by the vendor	Minimum Specifications are given in RFP document, bidders are advised to do due diligence before selection of any product. Product should fulfil RFP requirements.
49.	KVM Module	Minimum Specifications are given in RFP document, bidders are advised to do due diligence before selection of any product. Product should fulfil RFP requirements.
50.	ATCS controller and accessories	The bidder encouraged to conduct detailed survey to gather all the details to assess the requirement as per the RFP and project requirements
51.	2.19.2 All payments agreed to be made by Department to the Bidder in accordance with the Bid shall be inclusive of all statutory levies, duties, taxes and other charges whenever levied/applicable, if any, and Department shall not be liable to pay any such levies/other charges under or in relation to this Contract and/or the Services.	Any variation in the existing taxes, duties, levies or cess shall be adjusted accordingly with NOIDA Authority. This is to clarify that any variation in the existing taxes, duties, levies or cess shall be adjusted accordingly with NOIDA.
52.	However, in case of any new or fresh tax or levy imposed after submission of the proposal the Implementation Agency shall be entitled to reimbursement on submission of proof of payment of such tax or levy	The taxes, duties and levies will be paid on actuals by the Noida Authority.
53.	Electricity charges for all the buildings/command and control center shall be borne by the authority. The IA shall directly interact with electricity boards for provision of mains power supply at all the identified locations for ITMS field solution before Go-Live. The electricity charges after Go-Live of the project shall be borne by the authority as per actual consumption. The IA shall be responsible to submit the electricity bill including connection charge, meter charge etc. to the electricity board directly. IA shall have to submit the challan of bill submission to authority. Authority will reimburse the amount submitted to the IA after verification in next billing cycle.	Refer Vol-IIA of RFP, clause 5.8,
		1. The bidders need to assess all necessary approvals required

Sl. No	Content of RFP Requiring Clarification	Clarifications
55.	The Implementation Agency shall be responsible for obtaining all permits and approvals necessary to install the ITMS components from authority. However, authority shall borne the ROW charges and provide permissions from various government departments.	It is to clarify that only the ROW charges will be waived off. However, the Reinstatement (RI) charges along with other fees has to be borne by bidder.
56.	The IA shall provide O&M services for all project related components installed as part of ITMS project during the Contract Period, including one (1) year of warranty period after "Go-Live".	The IA shall provide O&M services for all project related components installed as part of ITMS project during the Contract Period, including one (1) year of warranty period after "Go-Live".
57.	Currently NIC e-Challan system is getting used for generation of challans against violations captured by installations of HTMS project and Mobile based hand-held solution being used by NOIDA Traffic Police.	Minimum Specifications are given in RFP document, bidders are advised to do due diligence before selection of any product. Product should fulfil RFP requirements.
58.	· All the required stationary and consumables shall be provided by IA at no extra cost. All necessary provisions shall be made by the bidder to accommodate such expenses during bidding.	The bidder has to assess the required stationary and consumables and factor the same during bidding.
59.	54. Ability to receive alerts on Mobile phones with SMS & should give live position of the Mobile phone on GIS Map	Minimum Specifications are given in RFP document, bidders are advised to do due diligence before selection of any product. Product should fulfil RFP requirements.
60.	A high-quality digital transceiver, to be placed at certain traffic junctions determined by the Police Department (mostly at junction boxes / camera poles to avoid any additional investments)	The bidder needs to assess and suggest the locations for the ECBs. The Noida Authority will provide an approval on the locations, post which the installation will take place.
61.	LED TV for war room	65" Full HD Display, 1080 P 16:9 aspect ratio, Contract Ration: 54.16736111, Screen Mirror in to support data sharing with multiple devises (Phone, Tablet, laptop, desktop etc) - 4 devises simultaneously. Wireless content sharing, Integrated Wireless and Bluetooth module, Bezel Size - 12mm or less, Wall Mount, Inputs – HDMI (2), DP, DVI-D, RGB, Audio, USB 3.0, Power - 1---240VAC, 50 Hz, It BIS, CE &RoHS Certified. (Refer Annexure 1 for further details)
62.	Junction Box IP 66 Outdoor for Power Supply, Network Switch and all other accessories as per specifications. Protection:IP 55, Junction Box design should ensure to keep the temperature within suitable operating range for equipment's and should also avoid intentional water splash and dustintake. Offered item shall be certified for IP55.	The bidder encouraged to conduct detailed survey to gather all the details to assess the requirement as per the RFP and project requirements. Minimum Specifications are given in RFP document, bidders are advised to do due diligence before selection of any product. Product should fulfil RFP requirements.
	Small Junction Box IP 66 Outdoor for ANPR	

Sl. No	Content of RFP Requiring Clarification	Clarifications
64.	The Scope includes supply, installation, commissioning and up-gradation (as required) of various field systems which include Adaptive Traffic Control System (ATCS) at Traffic Junctions, Traffic Surveillance, ANPR Cameras, PAS, ECB System, Red Light Violation Detection system, Speed Violation Detection System, ATCC, VMD Boards, PA and ECB and other IT infrastructure required for successful operation of the ITMS.	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
65.	Sr , No: 2 Automatic Number Plate Recognition (ANPR)System - Integration Video Management System and e challan system	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
66.	Sr , No: 3 <u>Traffic Surveillance Cameras - Integration</u> Video Management System and Variable Message Sign, CCC Application	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
67.	Sr , No: 4 <u>Traffic violation detection Cameras - Integration</u> Video Management System, Variable Message Signboards, CCC application and e challan system	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
68.	<u>Table 2: SI No 10</u> Diesel Generator (30 KVA) and all other accessories as per specifications.	The RFP is not restricting any bidder to propose their product. The bidders are free to choose any product and propose as a part of solution, provided they are meeting the RFP and project requirements.
69.	<u>Table 2: SI No 11</u> UPS 30 KVA with 1 Hr SMF battery backup (1+1 Redundancy) and all other accessories as per specifications.	The RFP is not restricting any bidder to propose their product. The bidders are free to choose any product and propose as a part of solution, provided they are meeting the RFP and project requirements.
70.	A. HTMS Infrastructure details: 3 Video Incident detection cameras 15 Nos 5 ANPR speed monitoring 24 Nos 4 Fixed box cameras 92 Nos 5 PTZ cameras 46	The selected IA need to comply to the scope related requirements mentioned in the Clause 3.6 of Volume II of RFP document
	shall support only secured media stream requests, unless explicitly configured otherwise. Secured media stream requests shall be secured with strong certificate-based authentication. Client authentication for media stream requests is claims-based and may use a limited lifetime	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.

72.	<p>All other needed best practices for best Cyber Security Standards must be followed and adopted in the development, deployment and adoption phases of the project</p>	<p>This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.</p>
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Sl. No.	Content of RFP Requiring Clarification	Clarifications
73.	The solution must support integration with third party DAST tool to perform virtual patching for its protected web applications. The solution must support integration with leading DAST solutions like White Hat, Qualys Guard, and IBM etc. to virtually patch web application vulnerabilities	The SI is responsible for procuring/ managing the DAST solution.
74.	6) Clarity of video at various times (15 FPS – Day & 8 FPS Night) in different video compression formats and different video resolutions as per RFP	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
75.	The Implementation Agency shall provide system integration services to customize and integrate the applications procured through the project. The ITMS and surveillance system applications proposed by the Implementation Agency should have open APIs and should be able to integrate and share the data with other third- p a r t y systems already available. The IA shall provide integration services to customize and integrate the applications procured through the project. The ITMS and surveillance system applications proposed by the IA should have open APIs and should be able to integrate and share the data with other third-party systems already available or coming up in the near future	The indicative integration requirements would be with: 1. Existing HTMS 2. Portal 3. e-challan 4. Email/SMS gateway 5. Helpdesk 6. Existing HTMS 7. CCTNS 8. Dial 112
76.	Third Party Audit	Pls. refer Clause 4.4.3 of Volume 3 and Clause 5.30 of Volume 2 of the RFP document. All such cost to be borne by the selected SI
77.	Scope of Work - Disaster Recovery (DR)	DR is not in the scope of bidder.
78.	The system should be designed to ensure that current and new applications can be seamlessly integrated (through an application integration solution) within its architecture with minimal impact and changes	These are the indicative integration requirements. The selection SI need to assess and come with the entire list in discussion with the NOIDA.
79.	ATCS	The bidder encouraged to conduct detailed survey to gather all the details to assess the requirement as per the RFP and project requirements. Refer Volume II A, Page 46 of 56, Read ATCC as ATCC & ATCS
	Sr. No.6 ATCS Traffic Controller and all other	The bidder encouraged to conduct detailed survey to gather

81.	3.27 Pedestrian / Pelican Traffic Signal Controller	The bidder encouraged to conduct detailed survey to gather all the details to assess the requirement as per the RFP and project requirements
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Sl. No.	Content of RFP Requiring Clarification	Clarifications
82.	General Query - Environmental Sensors Deployment Schedule	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
83.	General Query - ATCS Traffic Signals	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
84.	General Query - Arm and Lane Details for ATCS	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
85.	ROW	It is to clarify that only the ROW charges will be waived off. However, the Reinstatement (RI) charges along with other fees has to be borne by bidder.
86.	Re-instatement	It is to clarify that only the ROW charges will be waived off. However, the Reinstatement (RI) charges along with other fees has to be borne by bidder.
87.	Pole with Arm/ cantilever and all other accessories as per specifications.	The bidder encouraged to conduct detailed survey to gather all the details to assess the requirement as per the RFP and project requirements
88.	BoQ	The bidder encouraged to conduct detailed survey to gather all the details to assess the requirement as per the RFP and project requirements
89.	· None of the IT / Non-IT equipment's proposed by the IA should be End of Life product. It is essential that the technical proposal is accompanied by the OEM certificate in the format given in this Tender, where-in the OEM end of life product & shall support for at least 5 years from the date of Bid Submission.	Warranty and support for all IT / Non IT equipment's is 5 years. It is applicable in clauses where warranty is mentioned
90.	54. Ability to receive alerts on Mobile phones with SMS & should give live position of the Mobile phone on GIS Map	The clause can be read under the scope of work for TCCC
91.	56. VMS and Mobile App support for multiple sites spread across WAN to be controlled and viewed from central location. The App must have GIS based interface for Live and Playback of Cameras also intelligence for connecting to any ANPR camera within reach for live number plate feeds to check for hot listed vehicles.	The clause can be read under the scope of work for TCCC
92.	15. Export recordings in SEF(Secured exPort format) / .avi / .mp4 / .asf formats. Must be playable in any OS Windows or Linux or Unix	Bidder has to suggest optimum solution in line with the RFP requirements of MUIDA

Sl. No	Content of RFP Requiring Clarification	Clarifications
94.	61. Authentication parameters (username, password) for streaming to remote clients.	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
95.	68. User role based cameras and feature access. Define users with passwords and access to only specific cameras	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
96.	26. Should allow each application to be uniquely configured for every individual camera stream, with Parameters for camera calibration, image quality improvement, night/day settings etc.	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
97.	7. Lens 5~50 mm or suitable lenses to capture minimum 3.5 meters lane width from a minimum height of 6.5 meters.	This is an Indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
98.	7. Lens 5~50 mm or better	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
99.	The SDK shall enable end-users to develop new functionality (user interface, standalone applications, or services) to link the TCCC to third party business systems and applications such as Badging Systems, Human Resources Management Systems (HRMS), and Enterprise Resource Planning (ERP) systems.	The bidder needs to access and suggest the possible use cases under respective applications and number of applications for integration.
100.	TCCC should be capable to integrate open social media platforms and carry detailed cloud based social media analytics (e.g. sentiment analysis) to enable Police Department to track and monitor certain trending incident	The bidder needs to assess and suggest the possible use cases under respective applications
101.	System Architecture (Wireless RF) – Suggestive	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
102.	Lens Type- Varifocal, C/CS Mount, IR Correction full HD lens	These are indicative requirements given in the RFP. The bidder need to access and suggest the best possible solution which is aligned to the RFP and project requirement.
103.	S.No 39, RAM/ ROM : 2 GB/ minimum 16GB for OS, Windows 10 or better	The bidders can consider this clause under the scope of LPU.
	All the Network Switches / Active	The RFP is not restricting any bidder to propose their product. The bidders are free to choose any product and propose as

Sl. No.	Content of RFP Requiring Clarification	Clarifications
		pertaining to the MSME registration.
106.	Table 5: Connectivity Charges between DC (over Cloud) and TCCC (Primary and secondary) for 1 years	<p>1. There is only one TCCC envisaged in Noida for ITMS</p> <p>2. There is no Primary and Secondary TCCC envisaged in the project.</p>
107.	The bidder shall apply high standards of diligence in choosing an optimal OEM who complies with the tender conditions, specifications & SLAs. The bidder may evaluate products being proposed are not end of life and also there is guarantee of OEM support for minimum period of 06 years. The same may be formally secured through the Manufacturer's Authorizing form Prescribed in RFP.	The selection of OEM is the responsibility of SI and this clause need to be complied by SI.
108.	None of the IT / Non-IT equipment's proposed by the IA should be End of Life product. It is essential that the technical proposal is accompanied by the OEM certificate in the format given in this Tender, where-in the OEM end of life product & shall support for at least 5 years from the date of Bid. Submission.	Warranty and support for all IT / Non IT equipment's is 5 years. It is applicable in clauses where warranty is mentioned
109.	Grand Total with CESS and applicable Taxes	The price bid is inclusive of GST. The selected bidder will have to submit the GST certificate to Noida Authority after making the tax payments for verifications.
110.	ANPR Camera and all other accessories as per specifications. - 693 Nos	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
111.	Red light violation software -150 nos	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
112.	ANPR Camera and all other accessories as per specifications. - 693 Nos	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.

114.	Seat Belt - 267	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs.
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Sl. No	Content of RFP Requiring Clarification	Clarifications
115.	Traffic Analytics: g. No helmet & triple riding detection	This is an indicative requirement given in the RFP. The bidder may propose a product or an enhanced version of the product after doing a comprehensive due diligence. The proposed product should meet the project requirements and SLAs. The bidders should give the option for the given analytics but these analytics will be checked for their accuracy during PoC and design stage.
116.	For UPS	Lithium ion batteries (LIB) should be provide in all UPS. Bidders to quote accordingly.
117.	Artificial Intelligence (AI) based analytics	The project does not require AI based analytics. Bidders may exclude the same while designing the solution.
118.	<p>VMS features to support on site-out station processing unit communication & Electrical Interface (Required when LPU based solution is proposed) 72. The Onsite-out station processing unit communication & Electrical Interface should automatically reset in the event of a program hang up and restart after power failure. 73. The system should have secure access mechanism for validation of authorized personnel. 74. Deletion or addition and transfer of data should only be permitted to authorized users. 75. A log of all user activities should be maintained in the system. 76. Roles and Rights of users should be defined in the system. 77. The data shall be transferred to the TCCC in real time for verification of the infraction and processing of challan. 78. In the event that the connectivity to the TCC is not</p> <p>Volume IIB: Functional Requirement and Technical Requirement Specifications Page 49 of 118 S. No. Description Compliance (Y/N) Documentation Reference established then all data pertaining to the infraction shall be stored on site and will be transferred once the connectivity is re-established automatically</p>	These functions are not required as part of VMS features to support on site-out station processing unit communication & Electrical Interface (Required when LPU based solution is proposed). Bidders must design the solution and propose accordingly.
119	The ATCC sub-system shall be capable of computing unlimited derived fields/data sets based on several mathematical computations on the primary data points collected, in general, all computations required for deriving several traffic engineering measures shall be supported by the ATCC reporting module.	Traffic Engineering measures means the volume, type and patterns of traffic behaviour. This information may be used by Authorities for various traffic related planning of the city.

No. P-45021/2/2017-PP (BE-II)
Government of India
Ministry of Commerce and Industry
Department for Promotion of Industry and Internal Trade
(Public Procurement Section)

Udyog Bhawan, New Delhi
Dated: 04th June, 2020

To

All Central Ministries/Departments/CPSUs/All concerned

ORDER

Subject: Public Procurement (Preference to Make in India), Order 2017- Revision; regarding.

Department for Promotion of Industry and Internal Trade, in partial modification [Paras 2, 3, 5, 9(a), 9(b) and 10(b) modified and Para 3A added] of Order No.P-45021/2/2017-B.E.-II dated 15.6.2017 as amended by Order No.P-45021/2/2017-B.E.-II dated 28.05.2018 and Order No.P-45021/2/2017-B.E.-II dated 29.05.2019, hereby issues the revised 'Public Procurement (Preference to Make in India), Order 2017' dated 04.06.2020 effective with immediate effect.

Whereas it is the policy of the Government of India to encourage 'Make in India' and promote manufacturing and production of goods and services in India with a view to enhancing income and employment, and

Whereas procurement by the Government is substantial in amount and can contribute towards this policy objective, and

Whereas local content can be increased through partnerships, cooperation with local companies, establishing production units in India or Joint Ventures (JV) with Indian suppliers, increasing the participation of local employees in services and training them,

Now therefore the following Order is issued:

1. This Order is issued pursuant to Rule 153 (iii) of the General Financial Rules 2017.
2. **Definitions:** For the purposes of this Order:

'Local content' means the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent.

'Class-I local supplier' means a supplier or service provider, whose goods, services or works offered for procurement, has local content equal to or more than 50%, as defined under this Order.

'Class-II local supplier' means a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%, as defined under this Order.

'Non - Local supplier' means a supplier or service provider, whose goods, services or works offered for procurement, has local content less than or equal to 20%, as defined under this Order.

'L1' means the lowest tender or lowest bid or the lowest quotation received in a tender, bidding process or other procurement solicitation as adjudged in the evaluation process as per the tender or other procurement solicitation.

'Margin of purchase preference' means the maximum extent to which the price quoted by a "Class-I local supplier" may be above the L1 for the purpose of purchase preference.

'Nodal Ministry' means the Ministry or Department identified pursuant to this order in respect of a particular item of goods or services or works.

'Procuring entity' means a Ministry or department or attached or subordinate office of, or autonomous body controlled by, the Government of India and includes Government companies as defined in the Companies Act.

'Works' means all works as per Rule 130 of GFR- 2017, and will also include 'turnkey works'.

3. Eligibility of 'Class-I local supplier' / 'Class-II local supplier' / 'Non-local suppliers' for different types of procurement

(a) In procurement of all goods, services or works in respect of which the Nodal Ministry / Department has communicated that there is sufficient local capacity and local competition, only 'Class-I local supplier', as defined under the Order, shall be eligible to bid irrespective of purchase value.

(b) In procurement of all goods, services or works, not covered by sub-para 3(a) above, and with estimated value of purchases less than Rs. 200 Crore, in accordance with Rule 161(iv) of GFR, 2017, Global tender enquiry shall not be issued except with the approval of competent authority as designated by Department of Expenditure. Only 'Class-I local supplier' and 'Class-II local supplier', as defined under the Order, shall be eligible to bid in procurements undertaken by procuring entities, except when Global tender enquiry has been issued. In global tender enquiries, 'Non-local suppliers' shall also be eligible to bid along with 'Class-I local suppliers' and 'Class-II local suppliers'.

(c) For the purpose of this Order, works includes Engineering, Procurement and Construction (EPC) contracts and services include System Integrator (SI) contracts.

3A. Purchase Preference

(a) Subject to the provisions of this Order and to any specific instructions issued by the Nodal Ministry or in pursuance of this Order, purchase preference shall be given to 'Class-I local supplier' in procurements undertaken by procuring entities in the manner specified here under.

(b) In the procurements of goods or works, which are covered by para 3(b) above and which are divisible in nature, the 'Class-I local supplier' shall get purchase preference over 'Class-II local supplier' as well as 'Non-local supplier', as per following procedure:

- i. Among all qualified bids, the lowest bid will be termed as L1. If L1 is 'Class-I local supplier', the contract for full quantity will be awarded to L1.
- ii. If L1 bid is not a 'Class-I local supplier', 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the 'Class-I local supplier' will be invited to match the L1 price for the remaining 50% quantity subject to the Class-I local supplier's quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to such 'Class-I local supplier' subject to matching the L1 price. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price or accepts less than the offered quantity, the next higher 'Class-I local supplier' within the margin of purchase preference shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on Class-I local suppliers, then such balance quantity may also be ordered on the L1 bidder.

(c) In the procurements of goods or works, which are covered by para 3(b) above and which are not divisible in nature, and in procurement of services where the bid is evaluated on price alone, the 'Class-I local supplier' shall get purchase preference over 'Class-II local supplier' as well as 'Non-local supplier', as per following procedure:

- i. Among all qualified bids, the lowest bid will be termed as L1. If L1 is 'Class-I local supplier', the contract will be awarded to L1.
- ii. If L1 is not 'Class-I local supplier', the lowest bidder among the 'Class-I local supplier', will be invited to match the L1 price subject to Class-I local supplier's quoted price falling within the margin of purchase preference, and the contract shall be awarded to such 'Class-I local supplier' subject to matching the L1 price.
- iii. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price, the 'Class-I local supplier' with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on and contract shall be awarded accordingly. In case none of the 'Class-I local supplier' within the margin of purchase preference matches the L1 price, the contract may be awarded to the L1 bidder.

(d) "Class-II local supplier" will not get purchase preference in any procurement, undertaken by procuring entities.

4. **Exemption of small purchases:** Notwithstanding anything contained in paragraph 3, procurements where the estimated value to be procured is less than Rs. 5 lakhs shall be exempt from this Order. However, it shall be ensured by procuring entities that procurement is not split for the purpose of avoiding the provisions of this Order.
5. **Minimum local content:** The local content requirement to categorize a supplier as 'Class-I local supplier'/'Class-II local supplier'/'Non-local supplier' shall be as defined in the Para "2" of the Order. No change is permissible on this account. However, if any nodal Ministry/ Department finds that for any particular item, pertaining to their nodal ministry/department, the definition of Local Content, as defined in the Order, is not workable/ has limitations, it may notify alternate suitable mechanism for calculation of local content for that particular item.
6. **Margin of Purchase Preference:** The margin of purchase preference shall be 20%.
7. **Requirement for specification in advance:** The minimum local content, the margin of purchase preference and the procedure for preference to Make in India shall be specified in the notice inviting tenders or other form of procurement solicitation and shall not be varied during a particular procurement transaction.
8. **Government E-marketplace:** In respect of procurement through the Government E-marketplace (GeM) shall, as far as possible, specifically mark the items which meet the minimum local content while registering the item for display, and shall, wherever feasible, make provision for automated comparison with purchase preference and without purchase preference and for obtaining consent of the local supplier in those cases where purchase preference is to be exercised.
9. **Verification of local content:**
 - a. The 'Class-I local supplier'/'Class-II local supplier' at the time of tender, bidding or solicitation shall be required to indicate percentage of local content and provide self-certification that the item offered meets the local content requirement for 'Class-I local supplier'/'Class-II local supplier', as the case may be. They shall also give details of the location(s) at which the local value addition is made.
 - b. In cases of procurement for a value in excess of Rs. 10 crores, the 'Class-I local supplier'/'Class-II local supplier' shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.
 - c. Decisions on complaints relating to implementation of this Order shall be taken by the competent authority which is empowered to look into procurement-related complaints relating to the procuring entity.

- d. Nodal Ministries may constitute committees with internal and external experts for independent verification of self-declarations and auditor's/ accountant's certificates on random basis and in the case of complaints.
- e. Nodal Ministries and procuring entities may prescribe fees for such complaints.
- f. False declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.
- g. A supplier who has been debarred by any procuring entity for violation of this Order shall not be eligible for preference under this Order for procurement by any other procuring entity for the duration of the debarment. The debarment for such other procuring entities shall take effect prospectively from the date on which it comes to the notice of other procurement entities, in the manner prescribed under paragraph 9h below.
- h. The Department of Expenditure shall issue suitable instructions for the effective and smooth operation of this process, so that:
 - i. The fact and duration of debarment for violation of this Order by any procuring entity are promptly brought to the notice of the Member-Convenor of the Standing Committee and the Department of Expenditure through the concerned Ministry /Department or in some other manner;
 - ii. on a periodical basis such cases are consolidated and a centralized list or decentralized lists of such suppliers with the period of debarment is maintained and displayed on website(s);
 - iii. in respect of procuring entities other than the one which has carried out the debarment, the debarment takes effect prospectively from the date of uploading on the website(s) in the such a manner that ongoing procurements are not disrupted.

10. Specifications in Tenders and other procurement solicitations:

- a. Every procuring entity shall ensure that the eligibility conditions in respect of previous experience fixed in any tender or solicitation do not require proof of supply in other countries or proof of exports.
- b. Procuring entities shall endeavour to see that eligibility conditions, including on matters like turnover, production capability and financial strength do not result in unreasonable exclusion of 'Class-I local supplier'/ 'Class-II local supplier' who would otherwise be eligible, beyond what is essential for ensuring quality or creditworthiness of the supplier.
- c. Procuring entities shall, within 2 months of the issue of this Order review all existing eligibility norms and conditions with reference to sub-paragraphs 'a' and 'b' above.

- d. If a Nodal Ministry is satisfied that Indian suppliers of an item are not allowed to participate and/ or compete in procurement by any foreign government, it may, if it deems appropriate, restrict or exclude bidders from that country from eligibility for procurement of that item and/ or other items relating to that Nodal Ministry. A copy of every instruction or decision taken in this regard shall be sent to the Chairman of the Standing Committee.
- e. For the purpose of sub-paragraph 10 d above, a supplier or bidder shall be considered to be from a country if (i) the entity is incorporated in that country, or ii) a majority of its shareholding or effective control of the entity is exercised from that country; or (iii) more than 50% of the value of the item being supplied has been added in that country. Indian suppliers shall mean those entities which meet any of these tests with respect to India."

10A. Action for non-compliance of the Provisions of the Order: In case restrictive or discriminatory conditions against domestic suppliers are included in bid documents, an inquiry shall be conducted by the Administrative Department undertaking the procurement (including procurement by any entity under its administrative control) to fix responsibility for the same. Thereafter, appropriate action, administrative or otherwise, shall be taken against erring officials of procurement entities under relevant provisions. Intimation on all such actions shall be sent to the Standing Committee.

11. Assessment of supply base by Nodal Ministries: The Nodal Ministry shall keep in view the domestic manufacturing / supply base and assess the available capacity and the extent of local competition while identifying items and prescribing minimum local content or the manner of its calculation, with a view to avoiding cost increase from the operation of this Order.

12. Increase in minimum local content: The Nodal Ministry may annually review the local content requirements with a view to increasing them, subject to availability of sufficient local competition with adequate quality.

13. Manufacture under license/ technology collaboration agreements with phased indigenization: While notifying the minimum local content, Nodal Ministries may make special provisions for exempting suppliers from meeting the stipulated local content if the product is being manufactured in India under a license from a foreign manufacturer who holds intellectual property rights and where there is a technology collaboration agreement / transfer of technology agreement for indigenous manufacture of a product developed abroad with clear phasing of increase in local content.

14. Powers to grant exemption and to reduce minimum local content: The administrative Department undertaking the procurement (including procurement by any entity under its administrative control), with the approval of their Minister-in-charge, may by written order, for reasons to be recorded in writing,

- a. reduce the minimum local content below the prescribed level; or
- b. reduce the margin of purchase preference below 20%; or

- c. exempt any particular item or supplying entities from the operation of this Order or any part of the Order.

A copy of every such order shall be provided to the Standing Committee and concerned Nodal Ministry / Department. The Nodal Ministry / Department concerned will continue to have the power to vary its notification on Minimum Local Content.

15. **Directions to Government companies:** In respect of Government companies and other procuring entities not governed by the General Financial Rules, the administrative Ministry or Department shall issue policy directions requiring compliance with this Order.

16. **Standing Committee:** A standing committee is hereby constituted with the following membership:

Secretary, Department for Promotion of Industry and Internal Trade—Chairman
Secretary, Commerce—Member
Secretary, Ministry of Electronics and Information Technology—Member
Joint Secretary (Public Procurement), Department of Expenditure—Member
Joint Secretary (DPIIT)—Member-Convenor

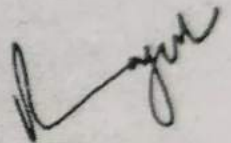
The Secretary of the Department concerned with a particular item shall be a member in respect of issues relating to such item. The Chairman of the Committee may co-opt technical experts as relevant to any issue or class of issues under its consideration.

17. **Functions of the Standing Committee:** The Standing Committee shall meet as often as necessary, but not less than once in six months. The Committee

- a. shall oversee the implementation of this order and issues arising therefrom, and make recommendations to Nodal Ministries and procuring entities.
- b. shall annually assess and periodically monitor compliance with this Order
- c. shall identify Nodal Ministries and the allocation of items among them for issue of notifications on minimum local content
- d. may require furnishing of details or returns regarding compliance with this Order and related matters
- e. may, during the annual review or otherwise, assess issues, if any, where it is felt that the manner of implementation of the order results in any restrictive practices, cartelization or increase in public expenditure and suggest remedial measures
- f. may examine cases covered by paragraph 13 above relating to manufacture under license/ technology transfer agreements with a view to satisfying itself that adequate mechanisms exist for enforcement of such agreements and for attaining the underlying objective of progressive indigenization
- g. may consider any other issue relating to this Order which may arise.

18. **Removal of difficulties:** Ministries /Departments and the Boards of Directors of Government companies may issue such clarifications and instructions as may be necessary for the removal of any difficulties arising in the implementation of this Order.

19. **Ministries having existing policies:** Where any Ministry or Department has its own policy for preference to local content approved by the Cabinet after 1st January 2015, such policies will prevail over the provisions of this Order. All other existing orders on preference to local content shall be reviewed by the Nodal Ministries and revised as needed to conform to this Order, within two months of the issue of this Order.
20. **Transitional provision:** This Order shall not apply to any tender or procurement for which notice inviting tender or other form of procurement solicitation has been issued before the issue of this Order.



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